LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

VALLEY-IVYGLEN PROJECT

County of Riverside, California
January 11, 2016

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1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared the following traffic impact analysis to determine the potential impacts associated with the construction of the Valley-Ivyglen (VIG) project. The proposed VIG project would involve the construction of a new, single-circuit 115-kV sub-transmission line and fiber optic line connecting the existing Valley and Ivyglen Substations in the County of Riverside. The 115-kV line would be approximately 27-miles long.

This traffic study has been prepared in accordance to *County of Riverside Traffic Impact Guidelines* and *Caltrans Guide for Preparation of Traffic Impact Studies*. The traffic analysis presented in this report encompasses the following key areas:

- Project Description
- Existing Conditions Assessment
- Traffic Analysis Approach & Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Construction Project Trip Generation, Distribution and Assignment
- Existing + Project Analysis
- Cumulative Projects Discussion
- Near-Term Analysis
- Significant Impacts and Mitigation Measures
- Construction Management Plan

Figure 1–1 shows the project area map.

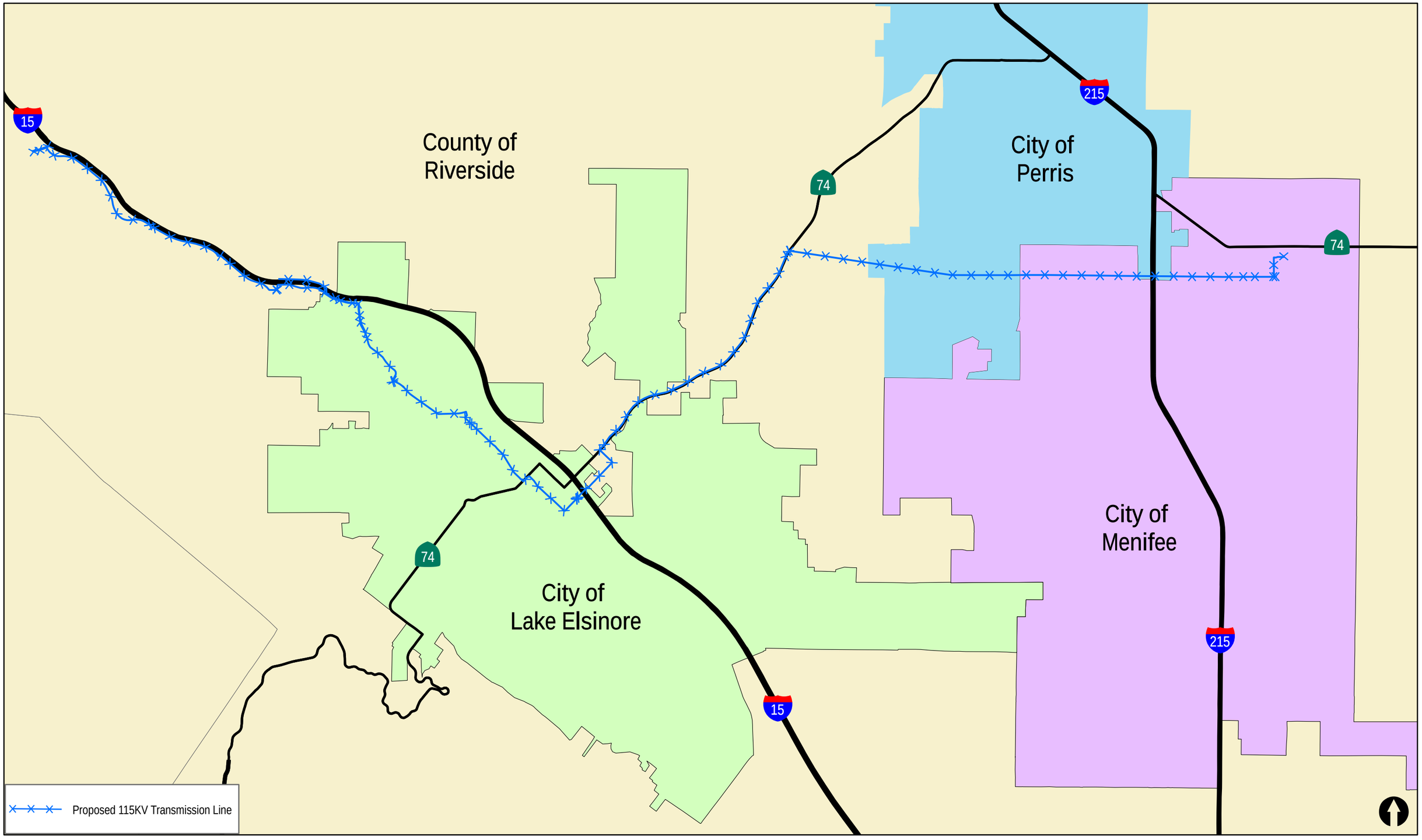

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Figure 1-1

Project Area Map

VALLEY-IVYGLEN PROJECT

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed Valley-Ivyglen alignment would generally follow the route approved in 2010 by California Public Utilities Commission (CPUC) and connect the existing Valley and Ivyglen's substations. From the Valley Substation, in the east, the proposed 115-kV line would traverse areas within the City of Menifee, City of Perris, City of Lake Elsinore and unincorporated areas of western Riverside County. The proposed route would cross Interstate 215 (I-215), State Route 74 (SR 74) and Interstate 15 (I-15).

2.2 Project Description

The proposed VIG project would involve the construction of a new, single-circuit 115-kV sub-transmission line and fiber optic line. The transmission line would be approximately 27-miles long and be constructed within approximately 23 miles of new right-of-way (ROW).

Southern California Edison (SCE) designed the proposed Valley-Ivyglen Project to meet long-term forecasted electrical demand in the proposed Valley-Ivyglen Project area and increase electrical system reliability. SCE estimates that construction of the proposed Valley-Ivyglen Project would take approximately 27 months.

This study analyzes the potential traffic impacts associated with the construction of the VIG project. The VIG project proposes to use temporary staging areas, which include a combination of existing substations (Valley and Ivyglen) and undeveloped parcels. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic-intensive of the construction activity. No substation construction is proposed in this project.

The following staging areas were identified for the VIG project.

Ivyglen Substation Staging Area

The Ivyglen Substation Staging Area is located on Temescal Canyon Road, west of Campbell Ranch Road in the County of Riverside. Attached is an aerial depicting the location of the Ivyglen Substation Staging Area.

Valley Substation Staging Area VIG1 (Valley Yard-North)

VIG1 is located on Menifee Road, north of the existing Valley Substation in the City of Menifee. VIG1 has been eliminated as part of the project and therefore not included in this traffic analysis. Attached is an aerial depicting the location of VIG1.

Valley Substation Staging Area VIG2 (Valley Yard-South)

VIG2 is located on Menifee Road, south of the existing Valley Substation in the City of Menifee. VIG2 is approximately 5.4 acres. Attached is an aerial depicting the location of VIG2.

Staging Area VIG3 (Joe 74 Yard)

VIG3 is located on Ethanac Road, east of SR 74 in the City of Perris. This staging area takes access off a non-circulation element roadway (unpaved roadway); hence, no traffic analysis was conducted for VIG3. VIG3 is shown here for informational purposes only. VIG3 is approximately 3.5 acres.

Staging Area VIG4 (Joe 74 Yard)

VIG4 is located on Ethanac Road, east of SR 74 in the City of Perris. This staging area takes access off a non-circulation element roadway (unpaved roadway); hence, no traffic analysis was conducted for VIG4. VIG4 is shown here for informational purposes only. VIG4 is approximately 2.8 acres.

Attached is an aerial depicting the location of VIG3 and VIG4.

Staging Area VIG5 (74 Central Yard)

VIG5 is located on Central Avenue (SR 74), south of El Toro Cut Off Road in the City of Lake Elsinore. This staging area assumes access off SR 74. VIG5 is approximately 1.6 acres. Attached is an aerial depicting the location of VIG5.

Staging Area VIG6 (Chaney Yard)

VIG6 is located on Collier Avenue, north of Chaney Street in the City of Lake Elsinore. VIG6 is approximately 5 acres. Attached is an aerial depicting the location of VIG6.

Staging Area VIG7 (Strawberry 74 Yard)

VIG7 is located on Collier Avenue, south of Riverside Drive in the City of Lake Elsinore. VIG7 is approximately 11 acres. Attached is an aerial depicting the location of VIG7.

Staging Area VIG8 (Catfish 74 Yard)

VIG8 is located on Collier Avenue, north of Riverside Drive in the City of Lake Elsinore. VIG8 is approximately 3.8 acres. Attached is an aerial depicting the location of VIG8.

Staging Area VIG9 (Orange Yard)

VIG9 is located on Horse Thief Canyon Road, south of I-15 in the County of Riverside. VIG9 is approximately 11 acres. Attached is an aerial depicting the location of VIG9.

3.0 STUDY AREA & EXISTING CONDITIONS

The study area for the proposed project was developed based on the location of the temporary staging areas and the anticipated construction traffic assignment (workers and heavy-vehicles) that will access them.

This traffic study analyzes eighteen (18) intersections. These intersections were divided into four (4) zones based on their proximity to a proposed staging area. It is important to note that certain intersections overlap between multiple zones given the proximity of staging areas. For this project, four (4) intersections along Indian Truck Trail were identified to fall under this scenario and therefore they overlap in Zones 1 and 2.

Table 3–1 contains a list of study area intersections within each zone and their governing jurisdiction. ***Figure 3–1*** shows the study area map.

TABLE 3–1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 1 Ivyglen Substation Staging Area	1. Temescal Canyon Road / Campbell Ranch Road	Riverside County
	2. Indian Truck Trail / Temescal Canyon Road	Riverside County
	3. Indian Truck Trail / I-15 Northbound Ramps	Riverside County / Caltrans
	4. Indian Truck Trail / I-15 Southbound Ramps	Riverside County / Caltrans
	5. Indian Truck Trail / Campbell Ranch Road	Riverside County
Zone 2 Staging Area VIG9	2. Indian Truck Trail / Temescal Canyon Road	Riverside County
	3. Indian Truck Trail / I-15 Northbound Ramps	Riverside County / Caltrans
	4. Indian Truck Trail / I-15 Southbound Ramps	Riverside County / Caltrans
	5. Indian Truck Trail / Campbell Ranch Road	Riverside County
	6. Horse Thief Canyon Road / Temescal Canyon Road	Riverside County
	7. Horse Thief Canyon Road / De Palma Road	Riverside County
	8. Lake Street / I-15 Northbound Ramps	City of Lake Elsinore / Caltrans
	9. Lake Street / I-15 Southbound Ramps	City of Lake Elsinore / Caltrans
	10. Lake Street / Temescal Canyon Road	City of Lake Elsinore
Zone 3 Staging Area VIG5, VIG6, VIG7 and VIG8	11. Central Avenue (SR 74) / Rosetta Canyon Drive	City of Lake Elsinore / Caltrans
	12. Central Avenue (SR 74) / I-15 Northbound Ramps	City of Lake Elsinore / Caltrans
	13. Central Avenue (SR 74) / I-15 Southbound Ramps	City of Lake Elsinore / Caltrans
	14. Central Avenue (SR 74) / Collier Avenue	City of Lake Elsinore / Caltrans

TABLE 3–1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 4 Valley Substation Staging Area VIG2	15. Menifee Road / Pinacate Road (SR 74)	City of Menifee / Caltrans
	16. McCall Boulevard / I-215 Southbound Ramps	City of Menifee / Caltrans
	17. McCall Boulevard / I-215 Northbound Ramps	City of Menifee / Caltrans
	18. McCall Boulevard / Menifee Road	City of Menifee / Caltrans

Staging Area VIG 1 has been eliminated from the project and hence no traffic analysis has been conducted on it. Access to Staging Areas VIG3 and VIG4 are via a non-circulation element roadway (unpaved roadway). Construction traffic accessing VIG3 and VIG 4 are not expected to impact background traffic given their remote location and therefore no traffic analysis was conducted for these locations.

3.1 Existing Roadway Conditions

The following is a description of the roadways in the project area. ***Figure 3–2*** illustrates the existing intersection geometry.

Temescal Canyon Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 miles per hour (mph).

Campbell Ranch Road is a four-lane, divided roadway in the project area. On-street parking is prohibited on either side of the roadway within the project vicinity. The posted speed limit is 45 mph.

De Palma Road is generally a two-lane, undivided roadway in the project area. West of Santiago Canyon Road, De Palma Road is a four-lane, divided roadway. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 mph.

Indian Truck Trail was recently widened from a two-lane to a four-lane roadway undercrossing at I-15 with dedicated left and right-turn lanes. Traffic signals were installed at three (3) intersections along Indian Truck Trail (Temescal Canyon Road, I-15 NB ramps and I-15 SB ramps). On-street parking is not permitted on either side of the roadway. A sidewalk is provided on the south side. There is no posted speed limit.

Horsethief Canyon Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 40 mph.

Lake Street is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 50 mph.

Collier Avenue is a four-lane divided roadway north of Central Avenue (SR 74) and a two-lane undivided roadway south of Central Avenue. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 45 mph.

Central Avenue (SR 74) is a four-lane, undivided roadway with intermittent left-turn lanes provided in the project area. On-street parking is not permitted on either side of the roadway within the project vicinity. The posted speed limit is 55 mph.

Rosetta Canyon Drive is a four-lane, divided roadway in the project area. On-street parking is not permitted on either side of the roadway within the project vicinity. The posted speed limit is 40 mph.

Pinacate Road (SR 74) is a four-lane, undivided roadway in the project area. On-street parking is not permitted on either side of the roadway within the project vicinity. The posted speed limit is 50 mph.

McCall Boulevard is a four-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 35 mph.

Menifee Road is a two-lane, undivided roadway north and a four-lane undivided roadway south of Case Road in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 mph.

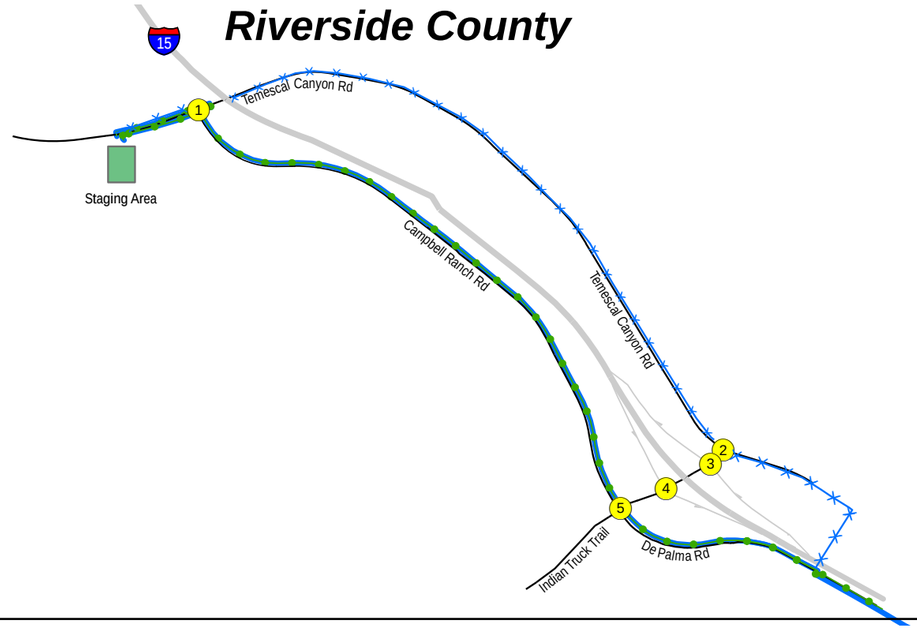
3.2 Existing Traffic Volumes

Existing weekday AM and PM peak hour traffic volumes were collected at the key study area intersections to capture peak commuter activity. The counts were conducted on Wednesday, August 20, 2014. Supplemental counts (2012) from the *Alberhill System Project* were also used. ***Figure 3–3*** shows the existing AM and PM peak hour turning movement counts.

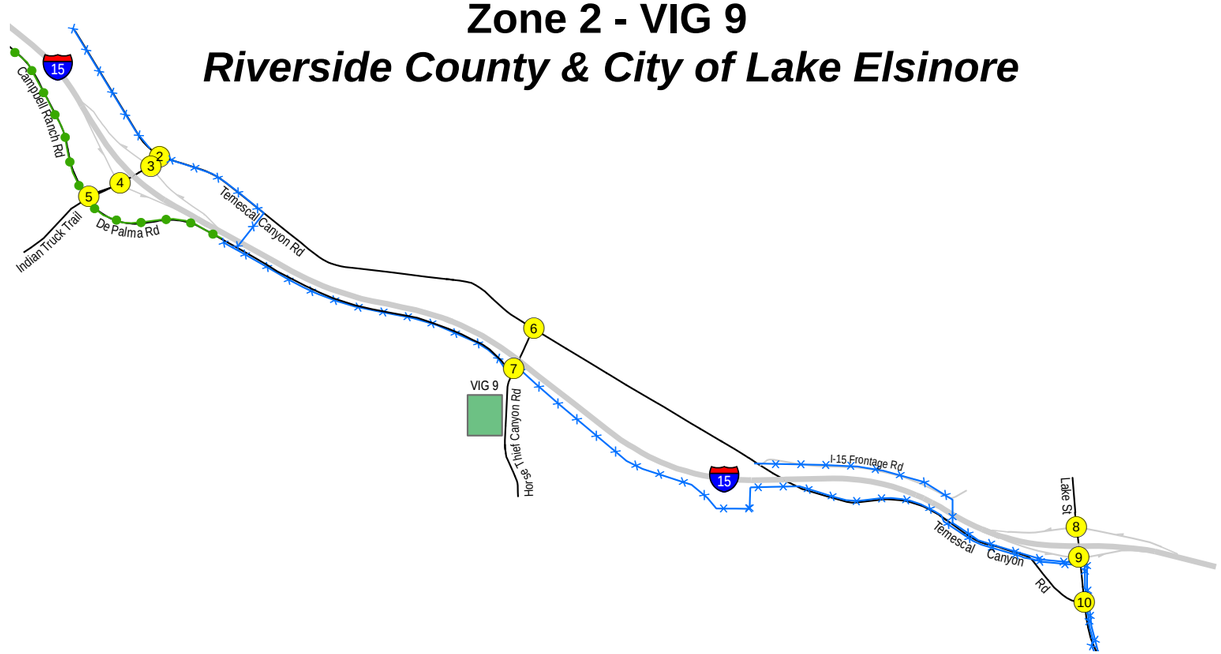
To verify the appropriateness of the 2012 and 2014 counts, LLG conducted a count validation review. As a part of count validation review, LLG commissioned peak hour traffic counts on Tuesday, June 30, 2015. Based on a review of the counts, the 2015 counts were approximately 5% lower than 2012 and 2014 counts. Therefore, to be conservative, although older, the higher 2012 and 2014 counts were deemed appropriate for the traffic analysis.

Appendix A contains copies of the intersection manual count sheets.

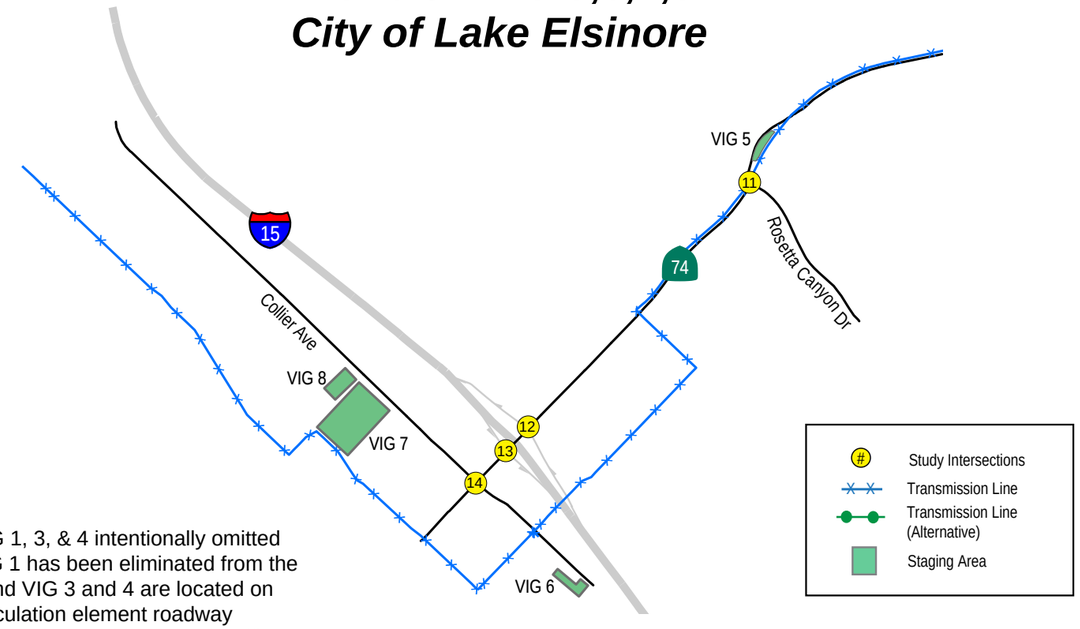
Zone 1 - Ivyglen Substation
Riverside County



Zone 2 - VIG 9
Riverside County & City of Lake Elsinore

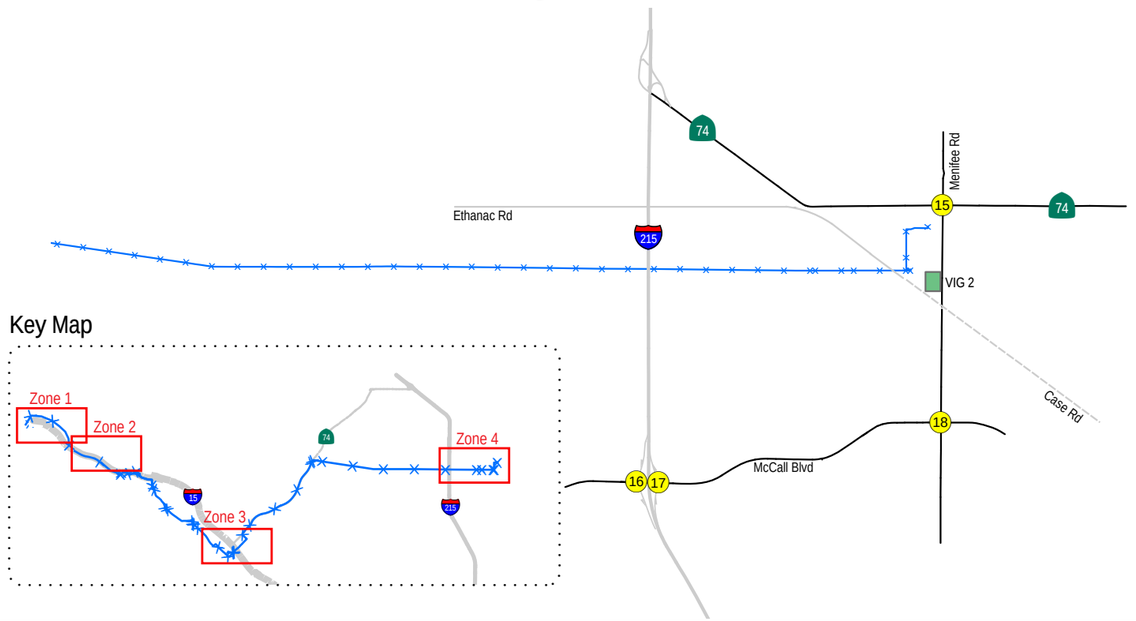


Zone 3 - VIG 5,6,7,8
City of Lake Elsinore



Note: VIG 1, 3, & 4 intentionally omitted since VIG 1 has been eliminated from the project and VIG 3 and 4 are located on a non-circulation element roadway (unpaved roadway) with minimal traffic.

Zone 4 - VIG 2 Valley Substation
City of Menifee



Key Map

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Figure 3-1

Study Area

VALLEY-IVYGLEN PROJECT

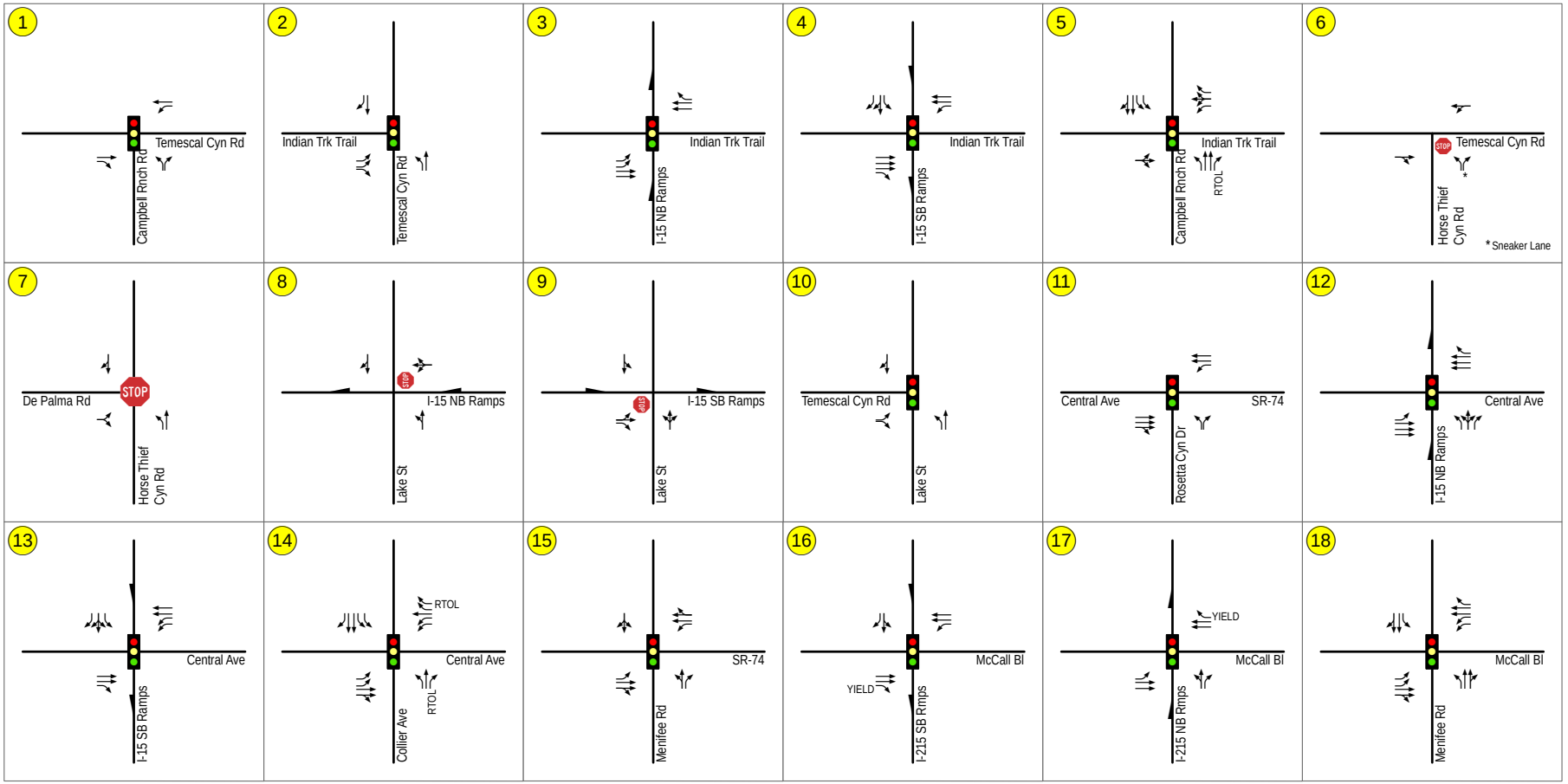

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Figure 3-2

Existing Conditions Diagram

VALLEY-IVYGLEN PROJECT

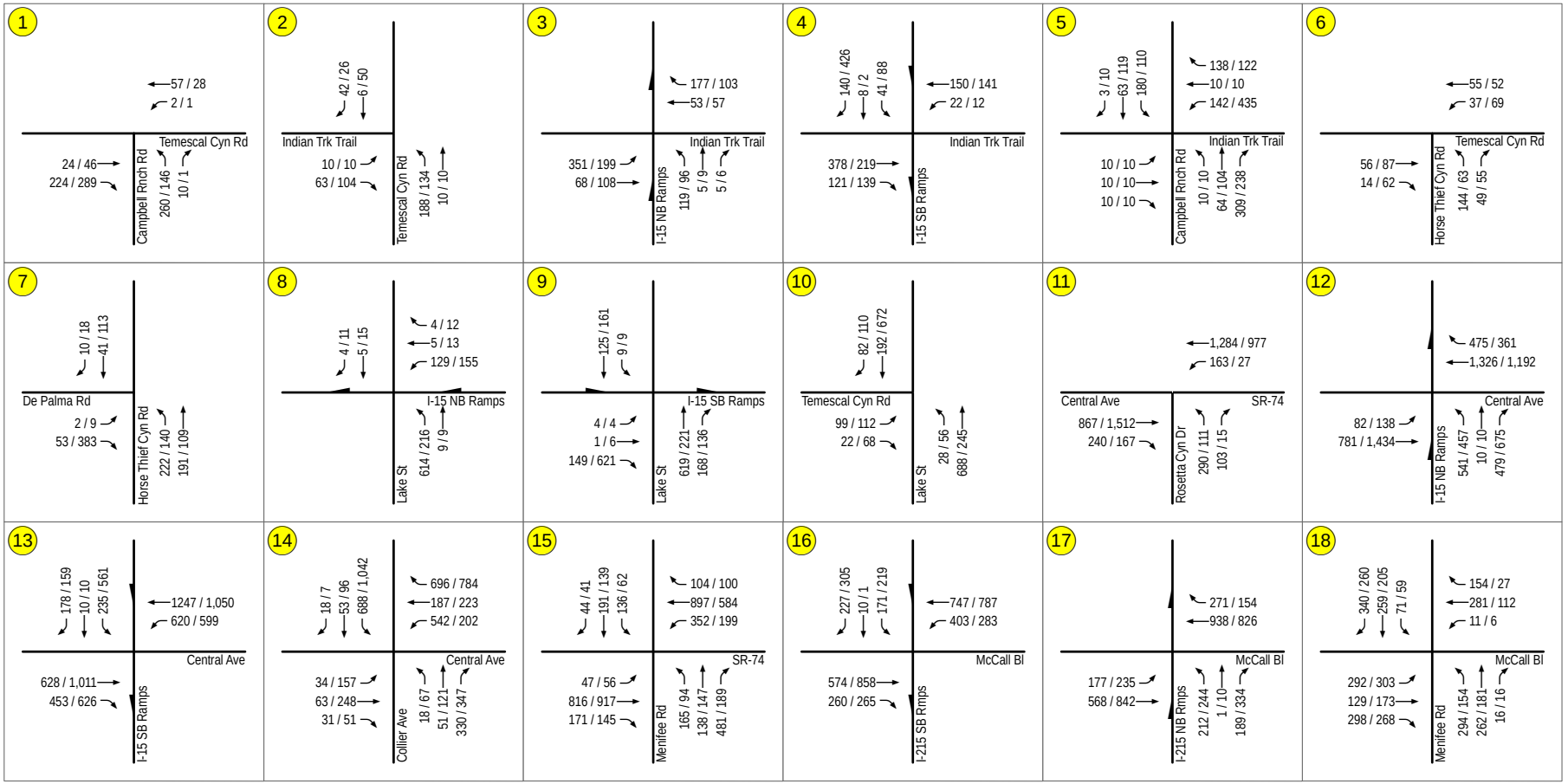

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Figure 3-3

Existing Traffic Volumes

VALLEY-IVYGLEN PROJECT

4.0 ANALYSIS APPROACH AND METHODOLOGY

4.1 Analysis Approach

This traffic study analyzes the potential impacts associated with the construction of the VIG project. The VIG project proposes temporary staging areas, which include a combination of existing substations (Valley and Ivyglen) and undeveloped parcels. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic intensive of the construction activity. This traffic analysis takes into account workers and heavy vehicles.

The construction project traffic (100%) was assigned to each staging area and the traffic impacts for Existing + Project and Near-Term conditions were evaluated accordingly. This traffic analysis is considered conservative as it assumes that 100% of the construction traffic will be accessing each staging area concurrently. The concurrent staging area operation may or may not materialize contingent on the final project phasing. In any case, the worst-case scenario was assumed and analyzed.

4.2 Intersection Methodology

Given that the majority of the intersections are in County of Riverside and that other local jurisdictions (such as City of Elsinore and City of Menifee) defer to the regional County guidelines, the traffic analyses for this project are consistent with the guidelines and standards outlined in the *Riverside County Transportation Department Traffic Impact Analysis Preparation Guide, dated April 2008*.

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 9.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in ***Appendix B***.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 19 and Chapter 20 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro*

(version 9.0) computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B.*

5.0 SIGNIFICANCE CRITERIA

The VIG project traverses various jurisdictions in Riverside County. From Valley Substation, in the east, the proposed 115-kV line would traverse areas within the City of Menifee, City of Lake Elsinore, unincorporated areas of western Riverside County and Caltrans facilities. The proposed route would cross Interstate 215 (I-215), State Route 74 (SR 74) and Interstate 15 (I-15). This section discusses the traffic impact guidelines for each affected jurisdiction.

5.1 Caltrans Guidelines

Per the *Caltrans Guide for the Preparation of Traffic Impact Studies*, the State "endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities"; but it does not require that LOS "D" be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Therefore, for the purposes of this traffic analysis, the lead agency guidelines were used for intersections that overlap with Caltrans'.

5.2 County of Riverside LOS Requirements

The County of Riverside General Plan considers LOS "C" as the minimum LOS to be maintained along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Urban, Expressways, conventional state highways or freeway ramp intersections. LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

Based on the above, ***Table 5–1*** summarizes the LOS required for each key study intersection located within the jurisdiction of the County of Riverside:

TABLE 5–1
COUNTY OF RIVERSIDE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
1. Temescal Canyon Road / Campbell Ranch Road	Urban	LOS D
2. Indian Truck Trail / Temescal Canyon Road	Urban	LOS D
3. Indian Truck Trail / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
4. Indian Truck Trail / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
5. Indian Truck Trail / Campbell Ranch Road	Urban	LOS D
6. Horse Thief Canyon Road / Temescal Canyon Road	County Maintained Road	LOS C
7. Horse Thief Canyon Road / De Palma Road	County Maintained Road	LOS C

5.3 City of Lake Elsinore LOS Requirements

The City of Lake Elsinore General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Lake Elsinore. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–2*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Lake Elsinore:

TABLE 5–2
CITY OF LAKE ELSINORE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
8. Lake Street / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
9. Lake Street / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
10. Lake Street / Temescal Canyon Road	State Route Freeway	LOS D
11. Central Avenue (SR 74) / Rosetta Canyon Drive	State Route Freeway	LOS D
12. Central Avenue (SR 74) / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
13. Central Avenue (SR 74) / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
14. Central Avenue (SR 74) / Collier Avenue	State Route Freeway	LOS D

5.4 City of Menifee LOS Requirements

The City of Menifee has also adopted the County of Riverside criteria to assess the impact of the Proposed Project. Based on the County of Riverside General Plan, the County of Riverside considers LOS "C" as the minimum LOS to be maintained along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development area, only at intersections of any combination of Secondary Highways, Major Highways, Urban, Expressways, conventional state highways or freeway ramp intersections. LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

As stated above and based on the combination of Secondary Highways or higher, LOS "D" is the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Menifee. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F."

Table 5–3 summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Menifee:

TABLE 5–3
CITY OF MENIFEE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
15. Menifee Road / Pinacate Road (SR 74)	State Route Freeway	LOS D
16. McCall Boulevard / I-215 Southbound Ramps	Freeway Ramp Intersection	LOS D
17. McCall Boulevard / I-215 Northbound Ramps	Freeway Ramp Intersection	LOS D
18. McCall Boulevard / Menifee Road	Secondary Highway	LOS D

6.0 EXISTING ANALYSIS

This section discusses the existing operations of the study area intersections using the methodologies described in *Section 5.0*.

Table 6–1 summarizes the existing intersection Levels of Service. As seen in *Table 6–1*, all of the study area intersections were calculated to currently operate at acceptable LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour)

The Lake Street/ I-15 NB ramp intersection is calculated to operate at deficient LOS due to the heavy northbound left-turn demand (uncontrolled) on to the I-15 on-ramp in the AM peak hour. This causes excessive delays to the WBL from off-ramp due to the lack of acceptable gaps in the traffic stream.

Menifee Road/ SR 74 is calculated to operate at deficient LOS due to heavy traffic volumes that are served by limited intersection geometry (one lane approaches) on the north and south legs combined with inefficient signal phasing (split phasing).

Appendix C contains the intersection analysis sheets for the Existing scenario.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing	
					Delay[a]	LOS[b]
***Zone 1* – Ivyglen Substation Staging Area**						
1. Temescal Canyon Rd/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM PM	11.2 10.4	B B
2. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM PM	49.6 43.2	D D
3. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM PM	38.6 31.6	D C
4. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM PM	25.2 29.7	C C
5. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM PM	38.7 37.2	D D
***Zone 2* – Staging Area VIG9**						
2. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM PM	49.6 43.2	D D
3. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM PM	38.6 31.6	D C
4. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM PM	25.2 29.7	C C
5. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM PM	38.7 37.2	D D
6. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[c]	AM PM	11.2 11.7	B B
7. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	LOS C	AWSC	AM PM	9.6 11.3	A B
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC[d]	AM PM	**374.9** 18.7	**F** C
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM PM	17.8 25.2	C D
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	LOS D	Signal	AM PM	7.8 13.8	A B

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing	
					Delay[a]	LOS[b]
***Zone 3* – Staging Area VIG5, VIG6, VIG7 and VIG8**						
11. Central Ave (SR 74)/ Rosetta Canyon Dr	City of Lake Elsinore	LOS D	Signal	AM	21.2	C
				PM	15.1	B
12. Central Ave (SR 74)/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	Signal	AM	28.4	C
				PM	29.6	C
13. Central Ave (SR 74)/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	LOS D	Signal	AM	25.9	C
				PM	48.8	D
14. Central Ave (SR 74)/ Collier Ave	City of Lake Elsinore	LOS D	Signal	AM	41.3	D
				PM	50.8	D
***Zone 4* – Valley Substation Staging Area VIG2**						
15. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee	LOS D	Signal	AM	**144.6**	**F**
				PM	53.4	D
16. McCall Blvd/ I-215 Southbound Ramps	City of Menifee / Caltrans	LOS D	Signal	AM	37.7	D
				PM	32.5	C
17. McCall Blvd/ I-215 Northbound Ramps	City of Menifee / Caltrans	LOS D	Signal	AM	23.1	C
				PM	37.0	D
18. McCall Blvd/ Menifee Rd	City of Menifee	LOS D	Signal	AM	39.1	D
				PM	29.1	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.
2. Grayscale denotes intersection overlap with zones, hence same delays are reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

7.0 CONSTRUCTION PROJECT TRIP GENERATION/ DISTRIBUTION/ ASSIGNMENT

7.1 Construction Background

The proposed Valley–Ivyglen Project would involve the construction of a new, single-circuit 115-kV sub-transmission line and fiber optic line. The construction workforce is anticipated to include 125 construction workers and 28 heavy vehicles on a typical workday.

7.2 Trip Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the project site. ***Table 7–1*** presents the project's construction trip generation. As discussed previously, the VIG Project study area is anticipated to include four (4) zones. Each zone would include 125 construction workers and 28 heavy vehicles on a typical workday. It should be noted that the number of trucks, construction vehicle data and construction operational characteristics were provided by Southern California Edison (SCE).

The trip generation of the proposed project was estimated based on the following assumptions.

- A six-day work week (Monday through Saturday from 7:00 AM to 7:00 PM) is anticipated. For purposes of traffic analyses, the typical and more critical weekday commuter peaks were analyzed.

- Given that the work day start time is at 7:00 AM, it is assumed that the construction workers would arrive before the AM commuter peak hour (7:00 AM to 9:00 AM). However, the construction workers would leave during the PM commuter peak hour (4:00 PM to 6:00PM), to be conservative. It should be noted that even though SCE encourages carpooling among workers, to be conservative, the analyses assumes no carpooling.

- The delivery trucks and dirt trucks would arrive/depart in the AM and PM peak hours, but will deliver materials throughout the day. Therefore, 20% of the truck traffic was assumed in the AM and 20% during the PM peak hours. A total of 40% of truck traffic was assumed in the peak hours.

- Additionally, the heavy vehicle traffic is converted to Passenger Car Equivalent (PCE) trips using the Highway Capacity Manual (2010) approved factors. According to Highway Capacity Manual 2010, PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since:

    - They are larger than passenger cars, and therefore, occupy more roadway space; and their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream, which cannot always be effectively filled by normal passing maneuvers.

- *Exhibit 14-12,* PCE's for Heavy Vehicles in General Terrain Segments, (obtained from "Highway Capacity Manual prepared by Transportation Research Board," dated Year 2010) summarizes PCE factors for various types of vehicles. The type of terrain in the project area was conservatively assumed as "rolling" and the corresponding passenger car equivalents of 2.5 for trucks was used. *Appendix B* includes the PCE factors.

The project (for each zone) is calculated to generate total of 390 ADT with 14 inbound / 14 outbound trips during the AM peak hour and 14 inbound / 139 outbound trips during the PM peak hour.

7.3 Construction Project Trip Distribution/Assignment

The VIG project proposes temporary staging areas that are anticipated to be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic intensive of the construction traffic (workers and heavy vehicles) for trip distribution and assignment purposes. Furthermore, to analyze a worst-case scenario, this traffic analysis assumes that 100% of the construction traffic will be accessing each staging area concurrently. Although no trips were assigned to intersection #2, it was included in the analysis as due to potential impacts from adjacent intersections.

The construction project traffic (100%) was assigned to each staging area. Project traffic volumes, both entering and exiting the Project sites, have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes (i.e. I-15 Freeway, I-215 Freeway, etc.),
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity,
- existing traffic volumes, and
- delivery and construction routes..

It is also important to note that the project proposes an alternative alignment (in Zone 1 and Zone 2) on Campbell Ranch Road in lieu of the currently proposed alignment on Temescal Canyon Road. No changes to the staging areas are proposed as part of the alternative alignments. Given that the project traffic is assigned to the staging areas, no change in analysis or new impacts are anticipated.

Figures 7–1 to ***7–4*** shows the project's regional traffic distribution for *Zones 1–4* respectively. ***Figures 7–5*** to ***7–8*** shows the project assignment for *Zones 1–4* respectively. ***Figure 7–9*** shows the total project assignment.

TABLE 7–1
CONSTRUCTION PROJECT TRIP GENERATION

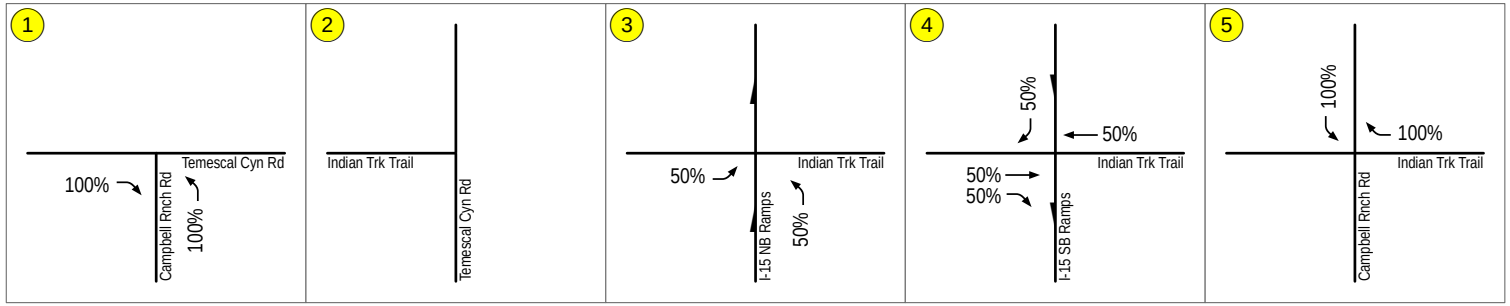
Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Construction Worker[b]	125	1.0	2 / employee	250	0%	0 : 0	0	0	0	50%	0 : 100	0	125	125
Heavy Vehicles[c]	28	2.5	2 / truck	140	20%	50 : 50	14	14	28	20%	50 : 50	14	14	28
Total				***390***			***14***	***14***	***28***			***14***	***139***	***153***

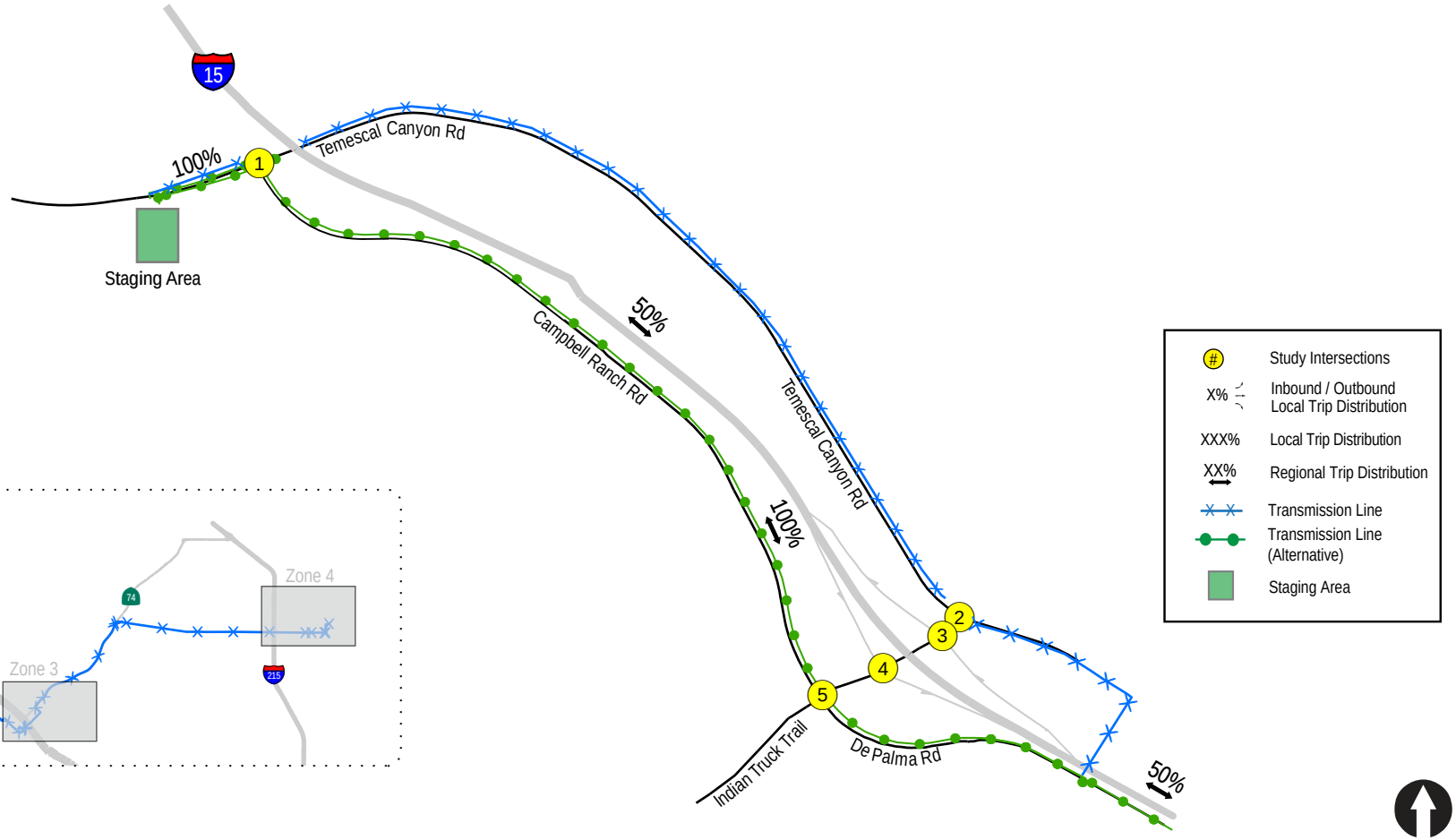
Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive at the sites in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and 20% during the PM peak hour.





Key Map

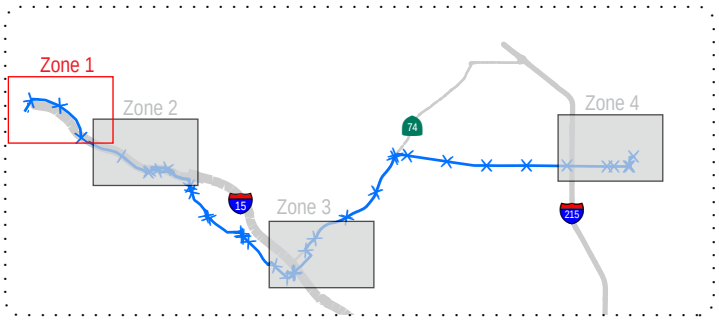


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Figure 7-1

Project Traffic Distribution - Zone 1 Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT

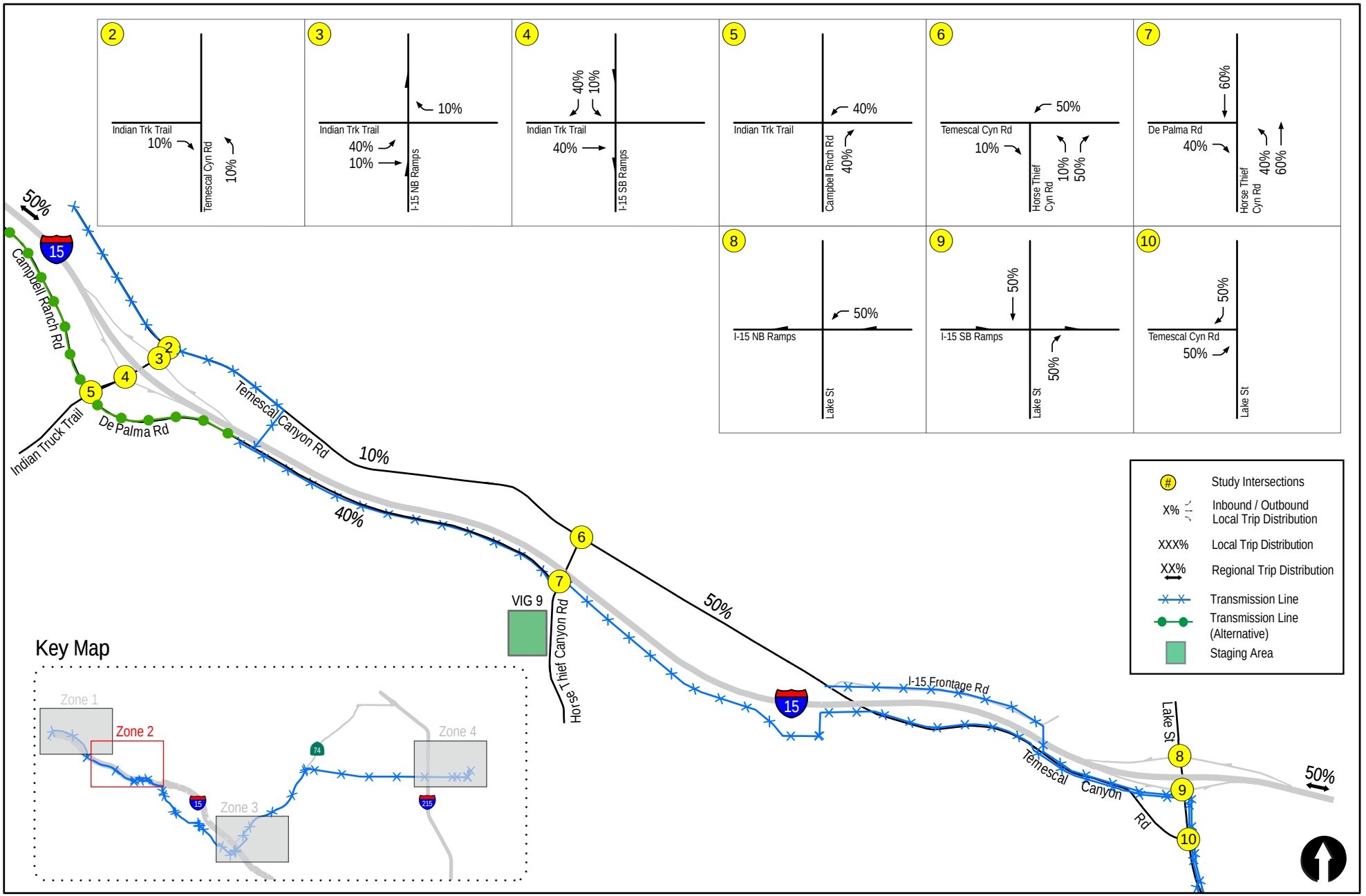

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Figure 7-2

Project Traffic Distribution - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT

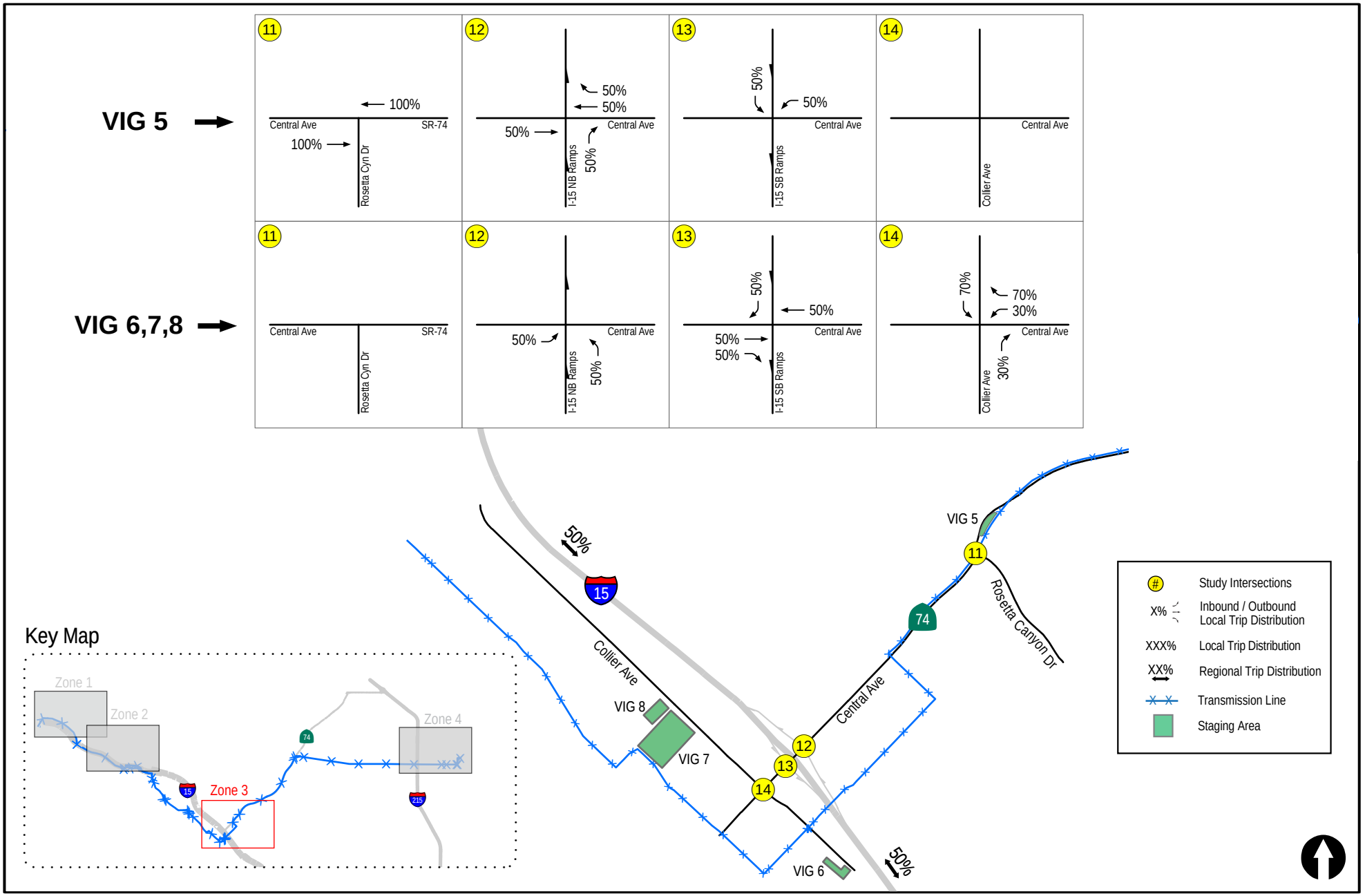

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Figure 7-3

Project Traffic Distribution - Zone 3 Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT

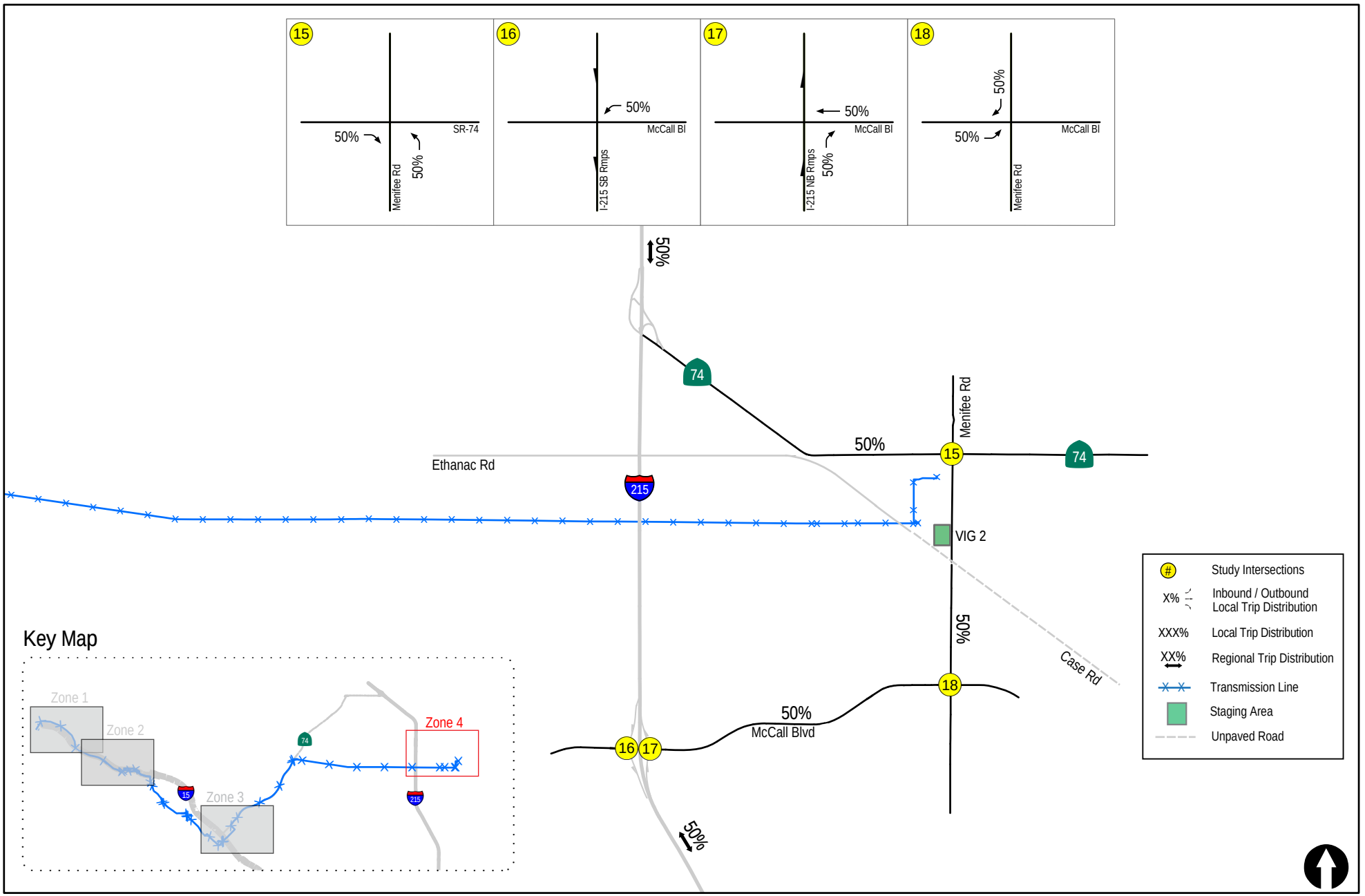

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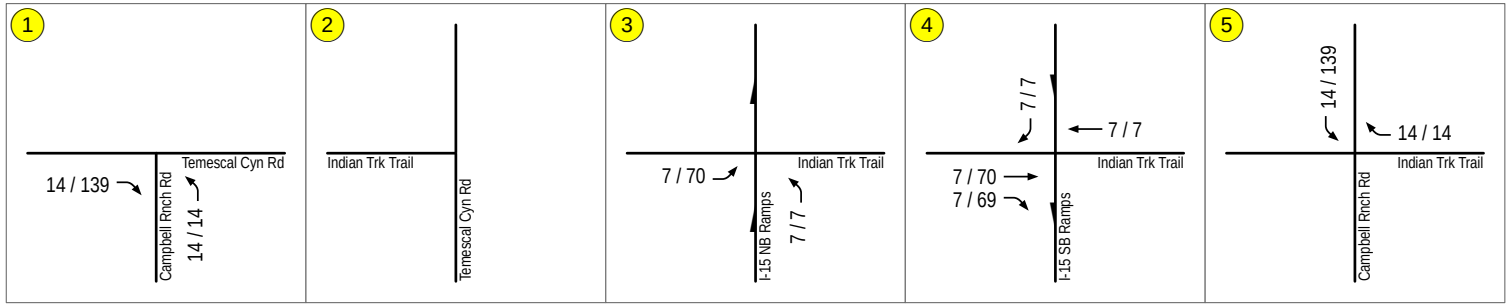
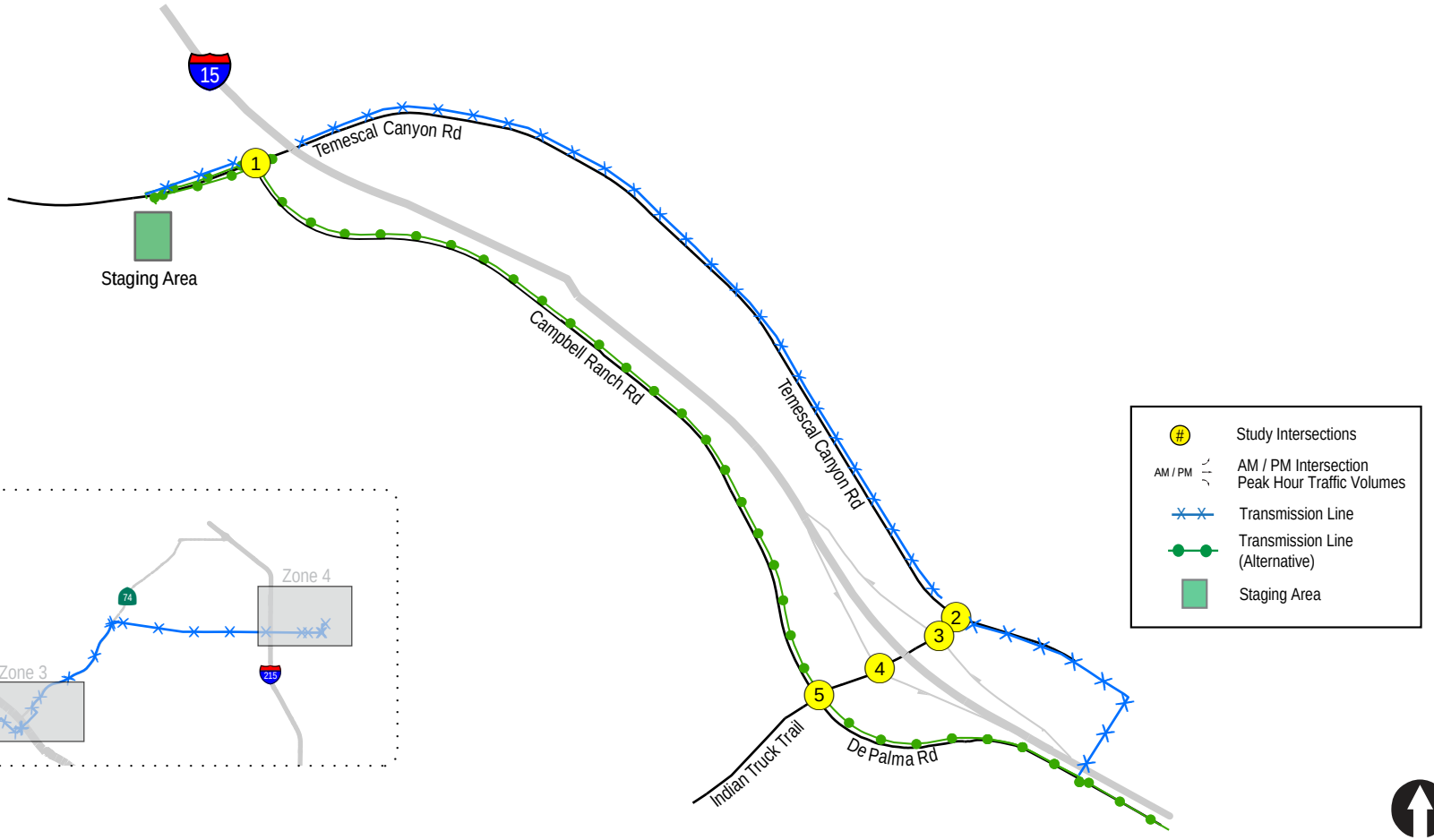
Figure 7-4

Project Traffic Distribution - Zone 4 Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT





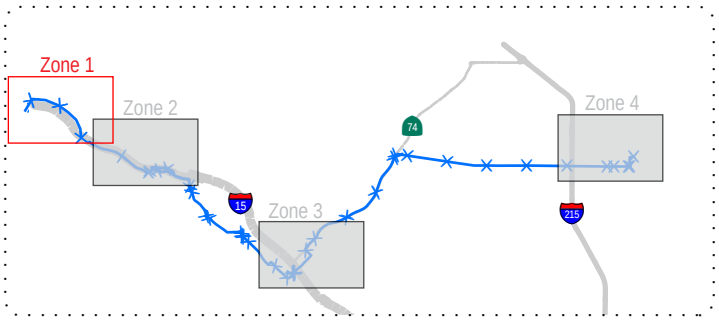


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Figure 7-5

Project Traffic Volumes - Zone 1 Ivyglen Substation

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT

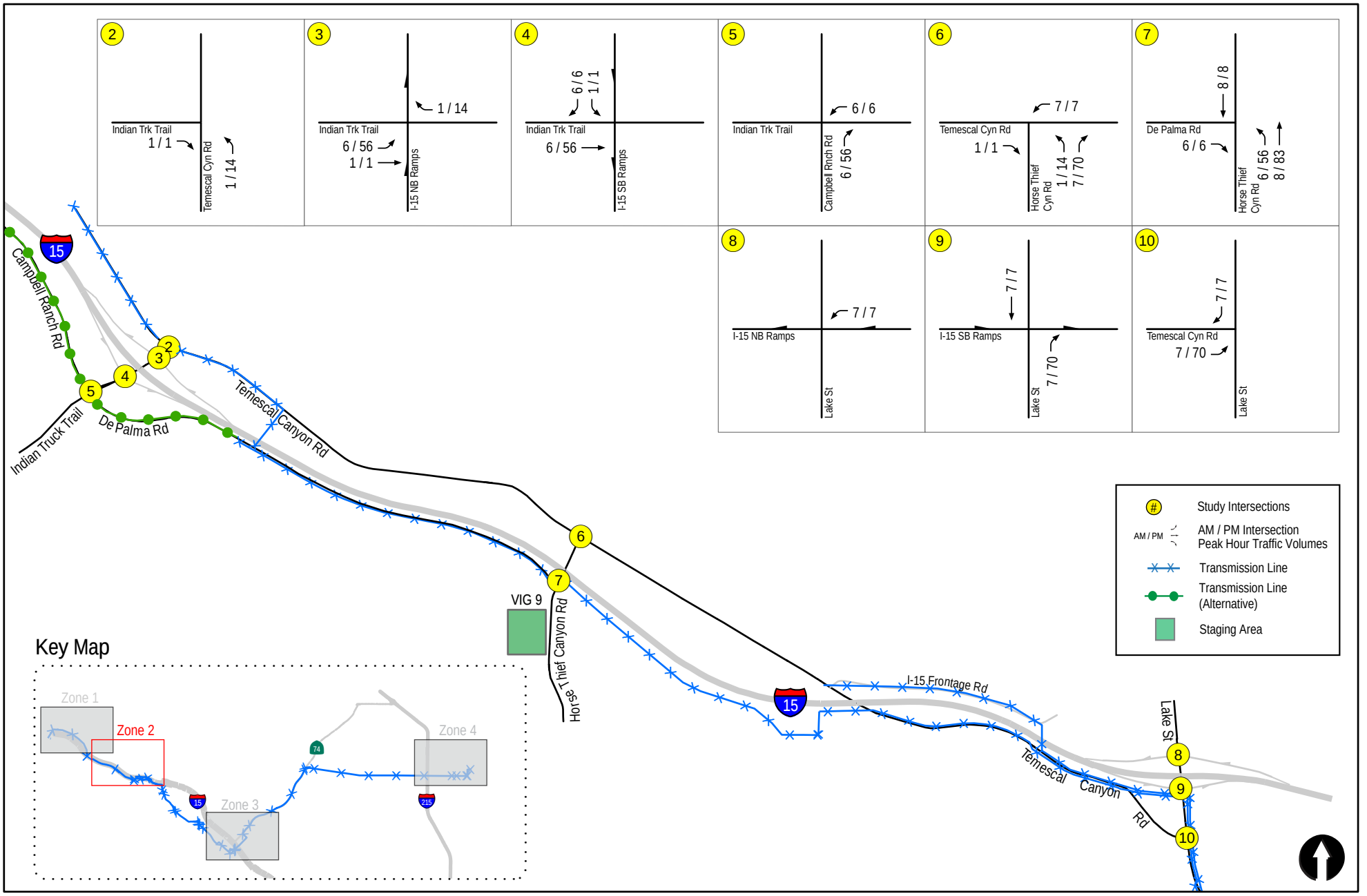

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Figure 7-6

Project Traffic Volumes - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT

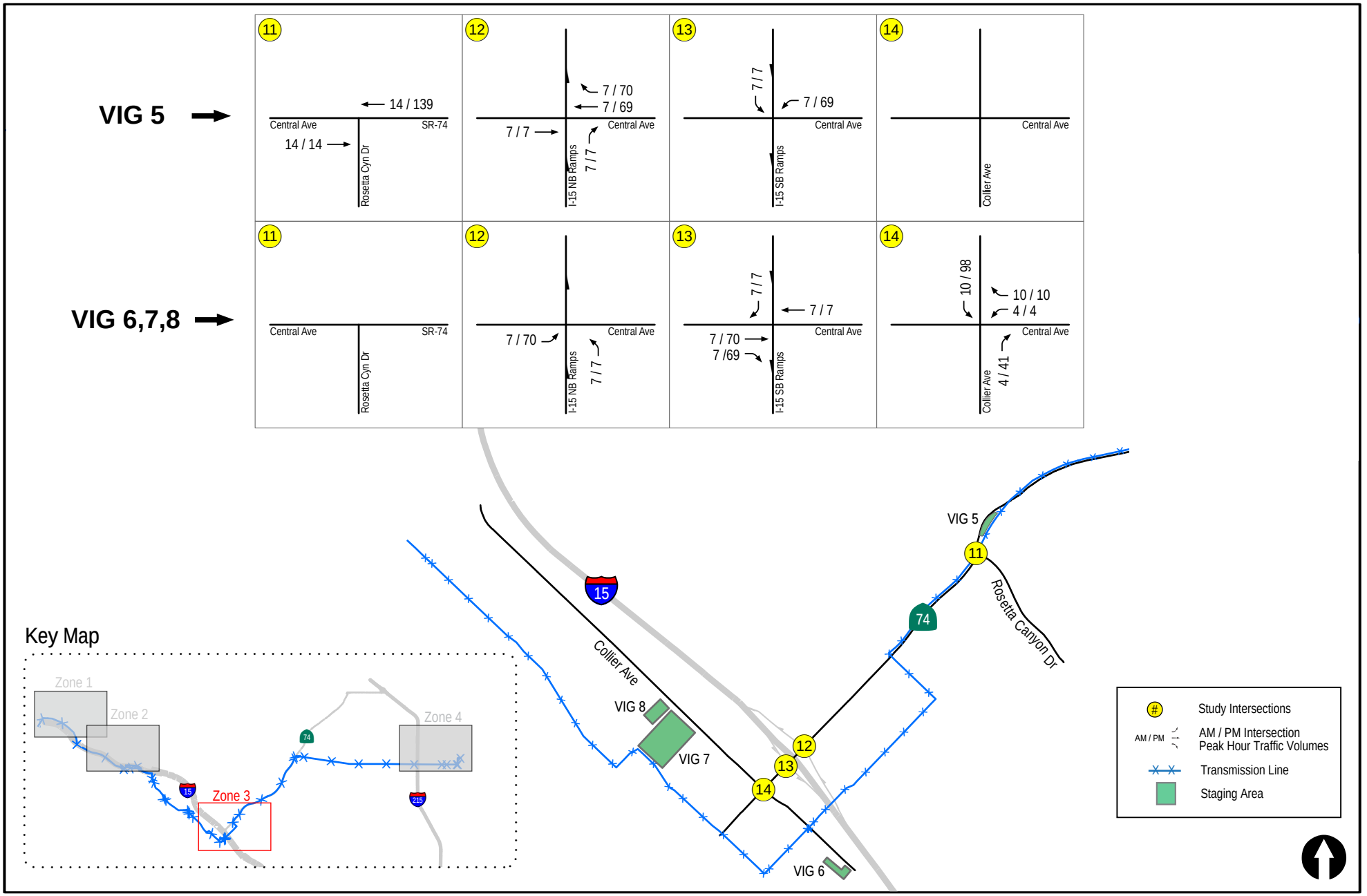

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Figure 7-7

Project Traffic Volumes - Zone 3 Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT

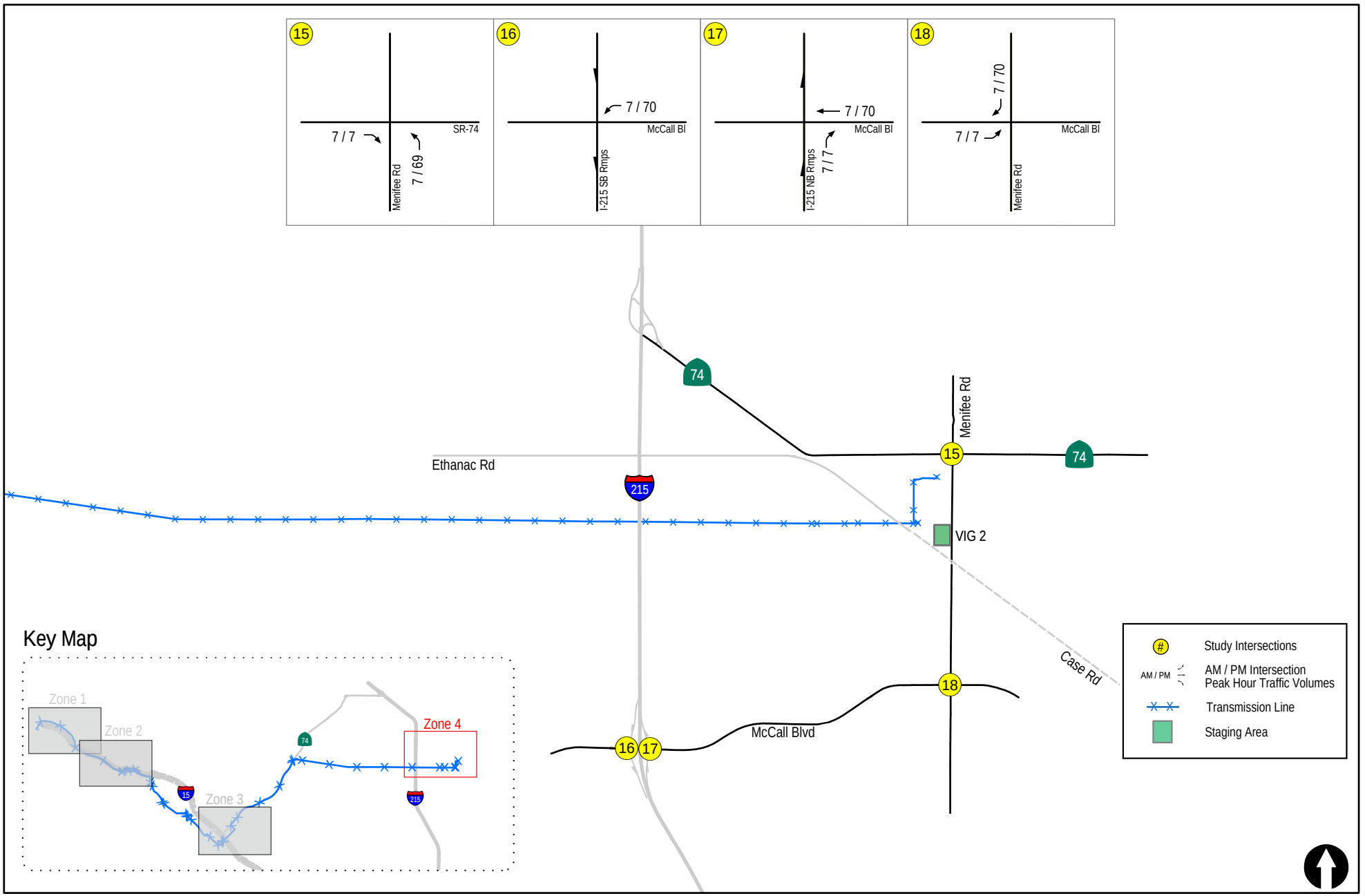

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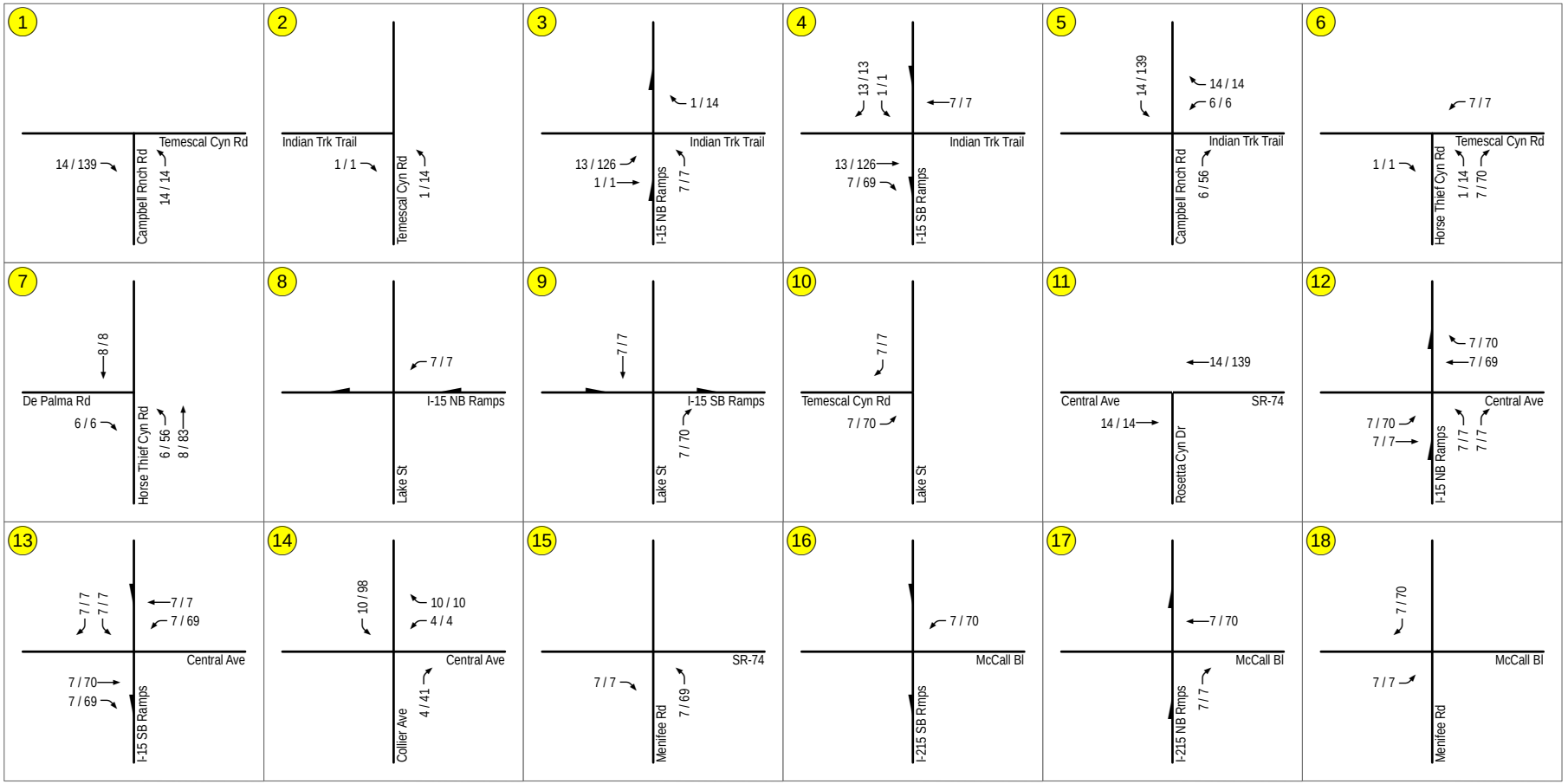
Figure 7-8

Project Traffic Volumes - Zone 4 Valley Substation & Staging Area

(Construction Workers & Heavy Vehicles)

VALLEY-IVYGLEN PROJECT



Study Intersections

AM / PM — AM / PM Intersection Peak Hour Volumes

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Figure 7-9

Total Project Traffic Volumes

VALLEY-IVYGLEN PROJECT

8.0 EXISTING + PROJECT ANALYSIS

The California Environmental Quality Act (CEQA) Guidelines and recent court cases suggest the assessment of existing (ground) conditions with project build-out conditions. Thus, the Existing + Project analysis presumes the full build out of the project under the existing environmental conditions (existing traffic volumes, existing roadway infrastructure, and existing surrounding land uses).

Project trip distribution and assignment for the Existing + Project scenario was assumed to be the same as for the Near-Term scenario. ***Figure 8–1*** illustrates the Existing + Project traffic volumes.

8.1 Existing + Projects

Table 8–1 summarizes the Existing + Project intersections level of service. As seen in *Table 8–1*, all intersections were calculated to continue to operate at LOS D or better under Existing + Project conditions with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Based on the LOS thresholds outlined in *Section 5.0,* **significant impacts** are identified at the following intersections as they are calculated to operate at a deficient LOS:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS E during the PM peak hour)

Appendix D contains the Existing + Project intersection analysis worksheets.

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 1* – Ivyglen Substation Staging Area**										
1. Temescal Canyon Rd/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM	11.2	B	11.4	B	0.2	-
				PM	10.4	B	11.4	B	1.0	-
2. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.6	D	49.7	D	0.1	-
				PM	43.2	D	44.0	D	0.8	-
3. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.6	D	38.9	D	0.3	-
				PM	31.6	C	34.7	C	3.1	-
4. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	25.2	C	25.3	C	0.1	-
				PM	29.7	C	31.5	C	1.8	-
5. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM	38.7	D	39.5	D	0.8	-
				PM	37.2	D	45.7	D	8.5	-
***Zone 2* – Staging Area VIG9**										
2. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.6	D	49.7	D	0.1	-
				PM	43.2	D	44.0	D	0.8	-
3. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.6	D	38.9	D	0.3	-
				PM	31.6	C	34.7	C	3.1	-
4. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	25.2	C	25.3	C	0.1	-
				PM	29.7	C	31.5	C	1.8	-
5. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM	38.7	D	39.5	D	0.8	-
				PM	37.2	D	45.7	D	8.5	-
6. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[d]	AM	11.2	B	11.5	B	0.3	-
				PM	11.7	B	12.2	B	0.5	-

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
7. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	LOS C	AWSC	AM	9.6	A	9.6	A	0.0	-
				PM	11.3	B	12.8	B	1.5	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC[e]	AM	**374.9**	**F**	**415.4**	**F**	**40.5**	**Yes**
				PM	18.7	C	19.2	C	0.5	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	17.8	C	18.0	C	0.2	-
				PM	25.2	D	26.0	D	0.8	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	LOS D	Signal	AM	7.8	A	8.0	A	0.2	-
				PM	13.8	B	17.2	B	3.4	-
***Zone 3* – Staging Area VIG5, VIG6, VIG7 and VIG8**										
11. Central Ave (SR 74)/ Rosetta Canyon Dr	City of lake Elsinore	LOS D	Signal	AM	21.2	C	21.4	C	0.2	-
				PM	15.1	B	15.2	B	0.1	-
12. Central Ave (SR 74)/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	Signal	AM	28.4	C	29.0	C	0.6	-
				PM	29.6	C	33.9	C	4.3	-
13. Central Ave (SR 74)/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	LOS D	Signal	AM	25.9	C	26.2	C	0.3	-
				PM	48.8	D	51.1	D	2.3	-
14. Central Ave (SR 74)/ Collier Ave	City of Lake Elsinore	LOS D	Signal	AM	41.3	D	41.5	D	0.2	-
				PM	50.8	D	54.0	D	3.2	-
***Zone 4* – Valley Substation Staging Area VIG2**										
15. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee	LOS D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-
				PM	53.4	D	**58.6**	**E**	**5.2**	**Yes**
16. McCall Blvd/ I-215 Southbound	City of Menifee / Caltrans	LOS D	Signal	AM	37.7	D	37.9	D	0.2	-
				PM	32.5	C	35.1	D	2.6	-

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
17. McCall Blvd/ I-215 Northbound	City of Menifee / Caltrans	LOS D	Signal	AM	23.1	C	23.2	C	0.1	-
				PM	37.0	D	37.4	D	0.4	-
18. McCall Blvd/ Menifee Rd	City of Menifee	LOS D	Signal	AM	39.1	D	39.5	D	0.4	-
				PM	29.1	C	29.4	C	0.3	-

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.
2. Grayscale denotes intersection overlap with zones, hence same delays are reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

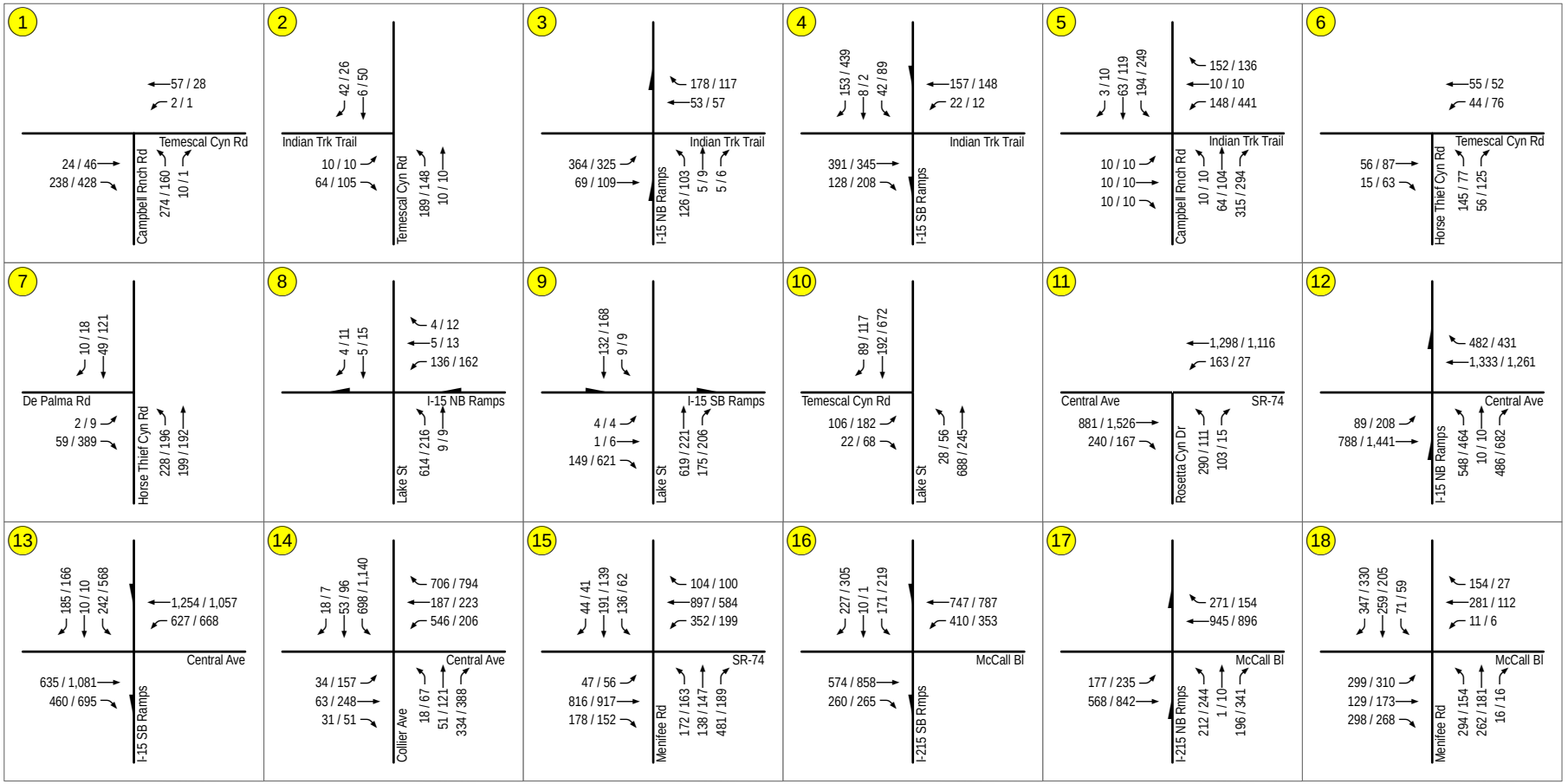

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Figure 8-1

Existing + Project Traffic Volumes

VALLEY-IVYGLEN PROJECT

9.0 CUMULATIVE PROJECTS

Cumulative projects represent reasonably foreseeable planned development that contributes to background traffic conditions for the Near-Term scenario. Based on a review of potential development in the area, the Alberhill System Project was considered and included in this traffic study. The following is a brief description of the cumulative project.

ALBERHILL SYSTEM PROJECT

The Alberhill Substation is proposed to be built on approximately 34 acres of a 124-acre property located on the northwest corner of the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County. This project includes the construction of the Alberhill Substation, two (2) 500-kV transmission line, one (1) new and modify four (4) existing 115-kV subtransmission lines, install telecommunications lines on the new and replace transmission and subtransmission lines and install a 120-foot microwave antenna tower at the proposed Alberhill Substation site.

The two (2) 500-kV transmission lines would each extend approximately 1 mile northeast to connect to the existing Serrano–Valley 500-kV transmission line. The 115-kV subtransmission line modifications and construction would occur southeast from the Alberhill Substation to Skylark Substation (approximately 11.5 miles) and from Skylark Substation to Newcomb Substation (approximately 9 miles). The applicant estimates that construction of the proposed Alberhill Project would take approximately 28 months.

The Alberhill Project study area includes four (4) zones. *Zone 1,* includes the construction of the Alberhill Substation and staging area, which comprises of 200 construction worker vehicles and 133 heavy vehicles generating 1,065 average daily trips (ADT's). *Zones 2 and 3,* located in the proximity of Lake Street/ I-15 and Central Avenue/ I-15 interchanges, respectively, includes the construction of a staging area, which comprises of 45 construction worker vehicles and 40 heavy vehicles generating 290 ADTs. *Zone 4,* includes the trips to the Corona Quarry dirt import site, which comprises of 10 construction worker vehicles and 72 heavy vehicles generating 380 ADTs.

Figure 9–1 shows the cumulative projects traffic volumes.

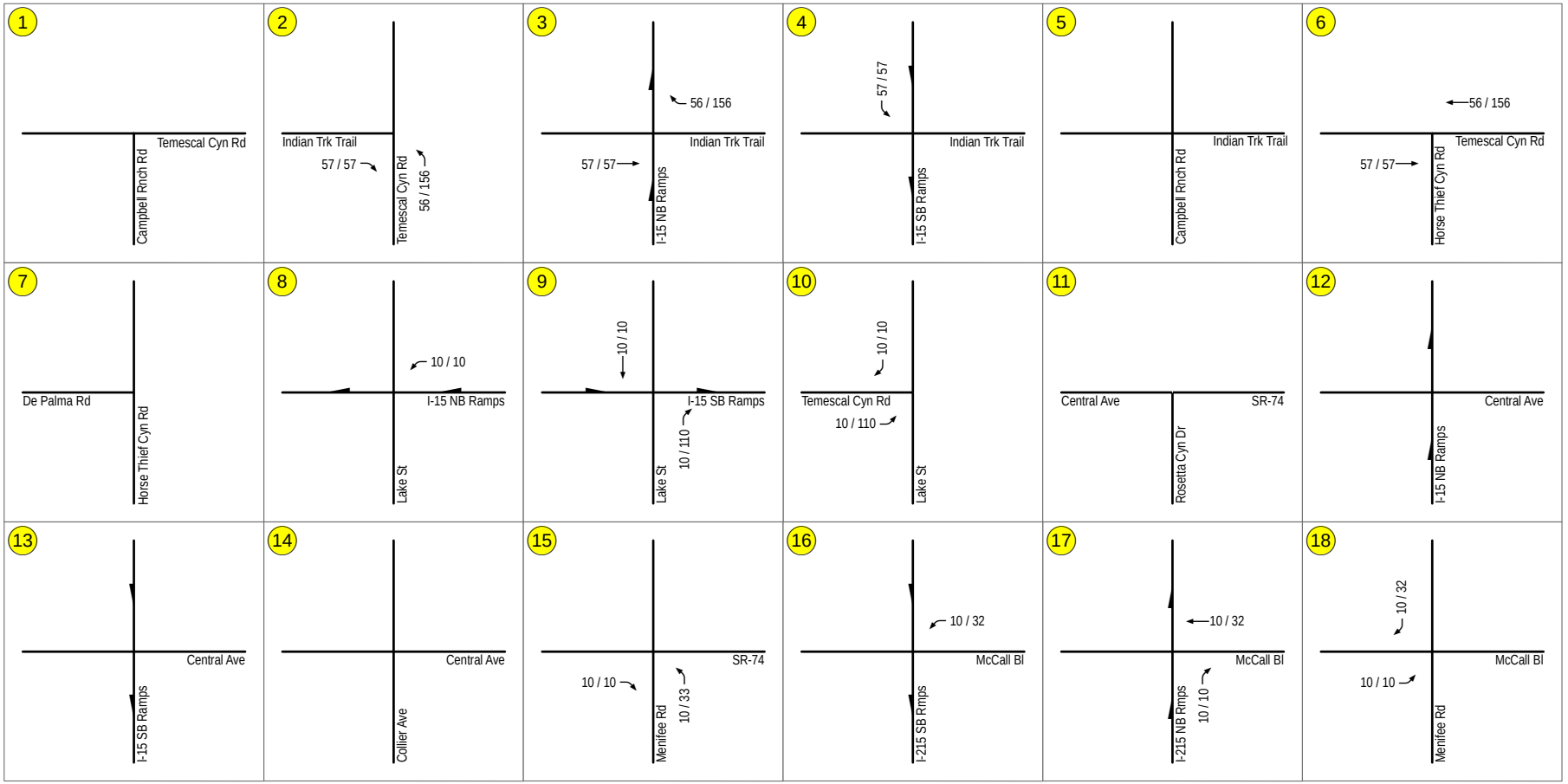

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Figure 9-1

Cumulative Projects Traffic Volumes

VALLEY-IVYGLEN PROJECT

10.0 NEAR-TERM ANALYSIS

The following section presents the analysis of study area intersections under Near-Term conditions without and with the Proposed Project.

10.1 Near-Term Traffic Volumes

Near-Term traffic volumes were calculated for the study area by adding the Near-Term cumulative project volumes onto the existing volumes. The traffic volumes represent LLG's best efforts of forecasting Near-Term conditions with the most recent information available at the time this report was prepared.

The volumes were also checked for consistency between intersections, where no driveways or roadways exist between intersections.

Figure 10–1 shows the Near-Term traffic volumes. ***Figure 10–1*** shows the Near-Term + Project traffic volumes.

10.2 Near-Term Operations

Table 10–1 summarizes the peak hour intersection operations for the Near-Term scenario. As seen in *Table 10–1*, all study area intersections are calculated to operate at LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Appendix E contains the Near-Term intersection analysis worksheets.

10.3 Near-Term + Project Operations

Table 10–1 summarizes the peak hour intersection operations for the Near-Term + Project scenario. As seen in *Table 10–1*, all study area intersections are calculated to continue to operate at LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Based on the LOS thresholds outlined in *Section 5.0*, **significant impacts** are identified at the following intersections as they are calculated to continue to operate at a deficient LOS:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS E during the PM peak hour)

Appendix F contains the Near-Term + Project intersection analysis worksheets

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 1* – Ivyglen Substation Staging Area**										
1. Temescal Canyon Rd/ Campbell Ranch Rd	County of Riverside	LOS D	Signal	AM	11.2	B	11.4	B	0.2	-
				PM	10.4	B	11.4	B	1.0	-
2. Indian Truck Trail/ Temescal Canyon Rd	County of Riverside	LOS D	Signal	AM	49.9	D	49.9	D	0.0	-
				PM	47.8	D	48.6	D	0.8	-
3. Indian Truck Trail/ I-15 Northbound Ramps	County of Riverside / Caltrans	LOS D	Signal	AM	38.7	D	39.3	D	0.6	-
				PM	32.0	C	35.3	D	3.3	-
4. Indian Truck Trail/ I-15 Southbound Ramps	County of Riverside / Caltrans	LOS D	Signal	AM	29.5	C	29.6	C	0.1	-
				PM	29.8	C	31.6	C	1.8	-
5. Indian Truck Trail/ Campbell Ranch Rd	County of Riverside	LOS D	Signal	AM	38.7	D	39.5	D	0.8	-
				PM	37.2	D	45.7	D	8.5	-
***Zone 2* – Staging Area VIG9**										
2. Indian Truck Trail/ Temescal Canyon Rd	County of Riverside	LOS D	Signal	AM	49.9	D	49.9	D	0.0	-
				PM	47.8	D	48.6	D	0.8	-
3. Indian Truck Trail/ I-15 Northbound Ramps	County of Riverside / Caltrans	LOS D	Signal	AM	38.7	D	39.3	D	0.6	-
				PM	32.0	C	35.3	D	3.3	-
4. Indian Truck Trail/ I-15 Southbound Ramps	County of Riverside / Caltrans	LOS D	Signal	AM	29.5	C	29.6	C	0.1	-
				PM	29.8	C	31.6	C	1.8	-

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
5. Indian Truck Trail/ Campbell Ranch Rd	County of Riverside	LOS D	Signal	AM	38.7	D	39.5	D	0.8	-
				PM	37.2	D	45.7	D	8.5	-
6. Horse Thief Canyon Rd/ Temescal Canyon Rd	County of Riverside	LOS C	TWSC[d]	AM	12.7	B	13.0	B	0.3	-
				PM	14.7	B	15.5	C	0.8	-
7. Horse Thief Canyon Rd/ De Palma Rd	County of Riverside	LOS C	TWSC	AM	9.6	A	9.6	A	0.0	-
				PM	11.3	B	12.8	B	1.5	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC[e]	AM	**429.6**	**F**	**462.9**	**F**	**33.3**	**Yes**
				PM	19.4	C	19.9	C	0.5	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	18.1	C	18.3	C	0.2	-
				PM	26.4	D	27.3	D	0.9	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	LOS D	Signal	AM	8.0	A	8.2	A	0.2	-
				PM	20.5	C	31.7	C	11.2	-
***Zone 3* – Staging Area VIG5, VIG6, VIG7 and VIG8**										
11. Central Ave (SR 74)/ Rosetta Canyon Dr	City of Lake Elsinore	LOS D	Signal	AM	21.2	C	21.4	C	0.2	-
				PM	15.1	B	15.2	B	0.1	-
12. Central Ave (SR 74)/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	Signal	AM	28.4	C	29.0	C	0.6	-
				PM	29.6	C	33.9	C	4.3	-
13. Central Ave (SR 74)/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	LOS D	Signal	AM	25.9	C	26.2	C	0.3	-
				PM	48.8	D	51.1	D	2.3	-
14. Central Ave (SR 74)/ Collier Ave	City of Lake Elsinore	LOS D	Signal	AM	41.3	D	41.5	D	0.2	-
				PM	50.8	D	54.0	D	3.2	-

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 4* – Valley Substation Staging Area VIG2**										
15. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee	LOS D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-
				PM	**55.3**	**E**	**62.9**	**E**	**7.6**	**Yes**
16. McCall Blvd/ I-215 Southbound	City of Menifee / Caltrans	LOS D	Signal	AM	38.0	D	38.2	D	0.2	-
				PM	33.7	C	36.4	D	2.7	-
17. McCall Blvd/ I-215 Northbound	City of Menifee / Caltrans	LOS D	Signal	AM	23.3	C	23.5	C	0.2	-
				PM	37.5	D	38.0	D	0.5	-
18. McCall Blvd/ Menifee Rd	City of Menifee	LOS D	Signal	AM	39.6	D	40.0	D	0.4	-
				PM	29.2	C	29.6	C	0.4	-

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.
2. Grayscale denotes intersection overlap with zones, hence same delays are reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

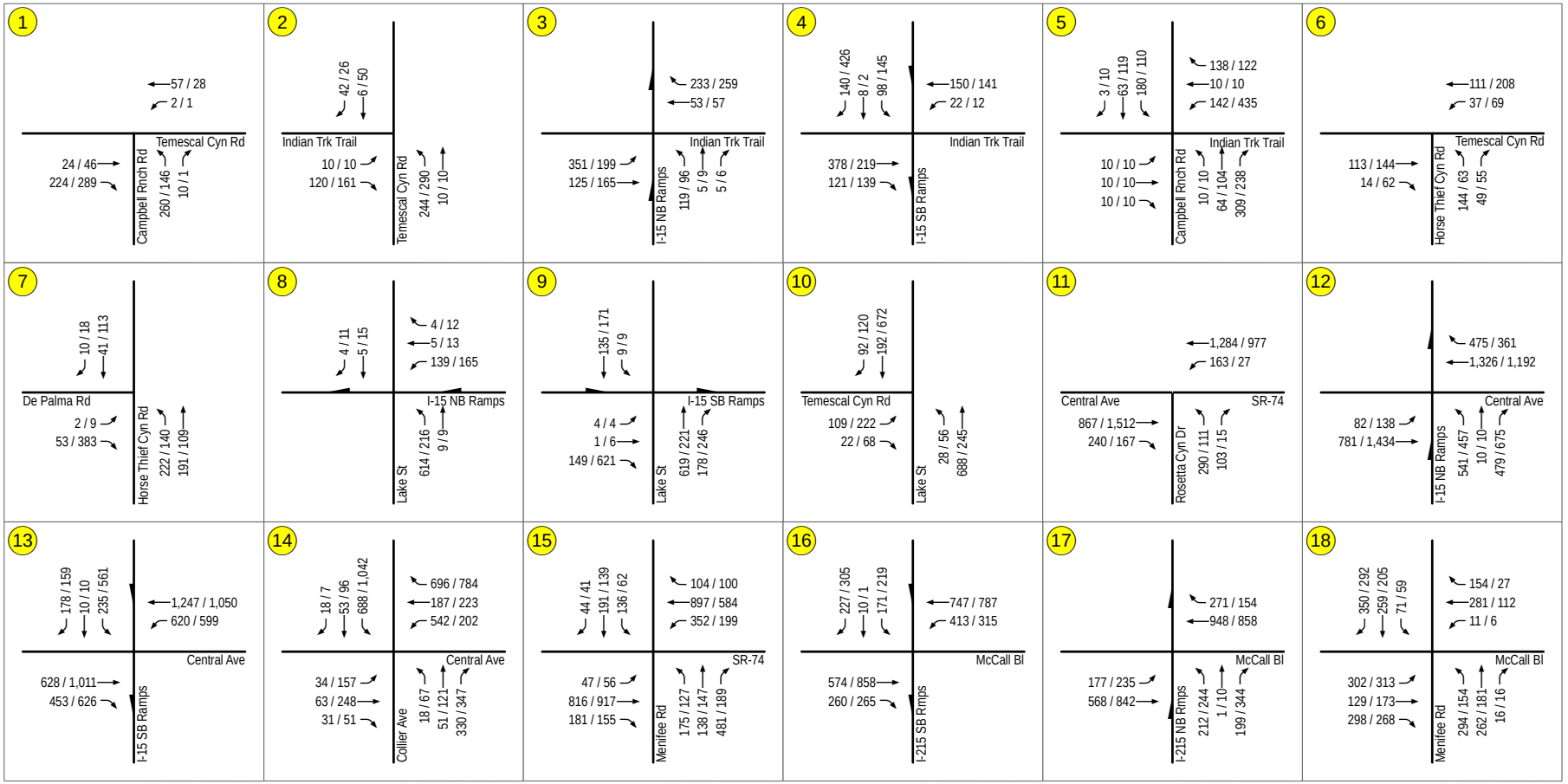

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Figure 10-1

Near-Term Traffic Volumes

VALLEY-IVYGLEN PROJECT

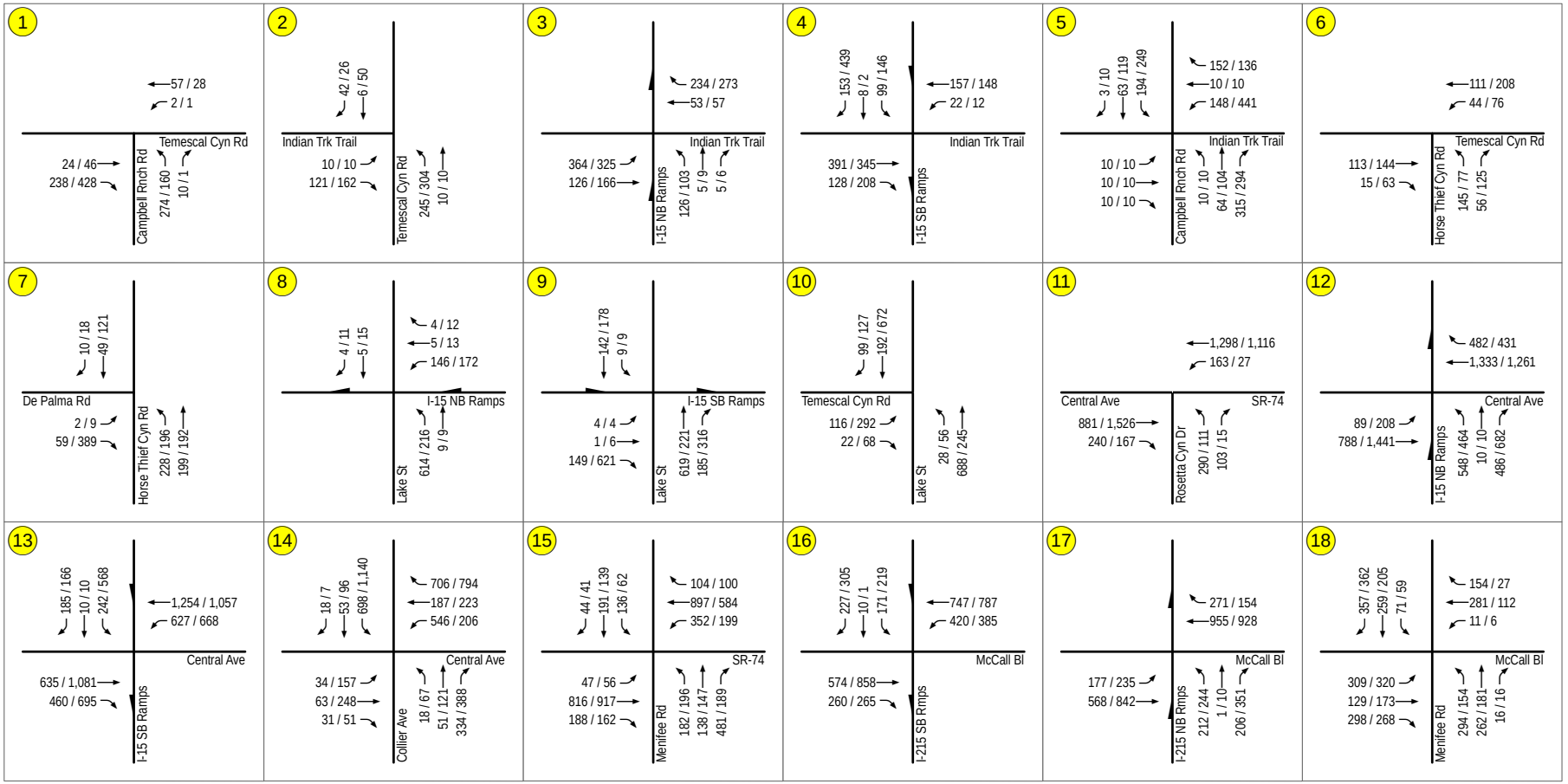

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Figure 10-2

Near-Term + Project Traffic Volumes

VALLEY-IVYGLEN PROJECT

11.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per the significance criteria and the analysis methodology presented in this report, project-related traffic is calculated to cause two (2) significant impacts within the study area. The following section identifies the significance of impact and recommended mitigation measure to address operating deficiency. This improvement, if implemented, would improve efficiency of traffic flow and return the intersection operation to below a level of significance.

11.1 Significance of Impacts

Based on the traffic impact guidelines outlined in *Section 5.0*, a significant impact is identified at the following intersections:

- Lake St/ I-15 Northbound Ramps (LOS F in the AM peak hour)
- Menifee Road / SR 74 (LOS E during the PM peak hour)

11.2 Mitigation Measures

The following summarizes the recommended mitigation measure:

LAKE STREET/ I-15 NORTHBOUND RAMPS

To mitigate the significant impact at the Lake Street/ I-15 NB ramp intersection, the project proposes to restrict construction traffic at this intersection during the AM peak hour. Given that the construction workers arrive prior to the commuter AM peak hour (7 AM to 9 AM), the restriction would apply to heavy vehicles only. The project should divert all heavy vehicles to the I-15/ Indian Truck Trail interchange during the AM peak hour. The contractor should be required to alert truck drivers of this condition and should install temporary signage on Lake Street to this effect.

As show in ***Tables 11–1*** and ***11–2***, with the implementation of the identified mitigation, no project traffic will utilize the off-ramp at the I-15 NB ramps/ Lake Street intersection during the commuter AM peak hour. Therefore, with the proposed mitigation, no traffic impacts are calculated as the level of service are reduced to pre-project levels.

As show in *Tables 11–1* and *11–2*, with the additional rerouted project traffic at the I-15/ Indian Truck Trail interchange, no impacts are identified at the affected intersections as the level of service are reduced to pre-project levels.

MENIFEE ROAD/ SR 74

To mitigate the significant impact at the Menifee Road/ SR 74 intersection, the project proposes to restrict construction traffic during the PM peak hour. The construction traffic would exit the staging area prior to or after the PM peak hour but not during the PM peak hour (4 – 6 p.m.). Alternatively, the project may also consider providing an alternative access route via Case road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.

As show in *Tables 11–1* and *11–2*, with the implementation of the identified mitigation, no traffic impacts are calculated as the level of service are reduced to pre-project levels.

Appendix G contains the post mitigation intersection calculation sheets.

TABLE 11–1
EXISTING + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project Mitigation		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
3. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.6	D	38.9	D	39.0	D	0.4	–
4. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	25.2	C	25.3	C	25.3	C	0.1	–
5. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM	38.7	D	39.5	D	39.5	D	0.8	–
7. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	LOS C	AWSC[d]	AM	9.6	A	9.6	A	9.7	A	0.1	–
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC[e]	AM	**374.9**	**F**	**415.4**	**F**	**374.9**	**F**	0.0	–
15. Menifee Rd/ SR 74	City of Menifee	LOS D	Signal	PM	53.4	D	**58.6**	**E**	53.4	D	0.0	–

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 11–2
NEAR-TERM + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Near-Term + Project Mitigation		Δ^c	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
3. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.7	D	39.3	D	39.2	D	0.5	–
4. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	29.5	C	29.6	C	29.6	C	0.1	–
5. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	LOS D	Signal	AM	38.7	D	39.5	D	39.5	D	0.8	–
7. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	LOS C	TWSC	AM	9.6	A	9.6	A	9.7	A	0.1	–
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC[e]	AM	**429.6**	**F**	**462.9**	**F**	**429.6**	**F**	0.0	–
15. Menifee Rd/ SR 74	City of Menifee	LOS D	Signal	PM	**55.3**	**E**	**62.9**	**E**	**55.3**	**E**	0.0	–

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

12.0 CONSTRUCTION MANAGEMENT PLAN

Construction traffic associated with trucks and employees will include some minor traffic delays; however, no significant impacts are anticipated with implementation of the proposed mitigation implemented. Nevertheless, to help further reduce the impact of construction-related traffic, it is recommended that Construction Management Plan (CMP) be implemented. The CMP should be developed in coordination with the responsible jurisdiction and at a minimum, address the following:

- **Staging Areas**
  - Identify the routes that workers and construction vehicles will utilize for the delivery of construction materials (i.e. lumber, tiles piping, windows, dirt import, etc.), to access the staging areas.
  - Ensure adequate sight distance per respective jurisdiction standards are provided at staging area locations to ensure proper line of sight is available for construction vehicular and truck traffic.
  - Delivery of materials is recommended to occur off-peak, wherever possible.
  - Encourage carpooling among construction workers to reduce construction traffic demand.
  - All construction-related parking at the staging areas should be kept out of the adjacent public roadways.

- **Transmission Lines/ Fiber Optic Lines Construction**
  - All haul routes should be kept clean and free of debris including but not limited to gravel and dirt as a result of its operations.
  - Hauling or transport of oversize loads should occur off-peak wherever possible.
  - Construction activities completed within public street rights-of-way would require the preparation of a Traffic Control Plan. This Plan should be prepared according to the standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as each respective jurisdiction's requirements.
  - Construction activity that requires partial lane closures is recommended to occur only during off-peak hours and would require traffic control personnel (such as flagmen) to ensure smooth and efficient flow of traffic.
  - Construction activity that requires full roadway closures is recommended to occur only during nights and weekends. This would require the preparation of a "detour" plan to ensure adequate alternate routes are planned.

- **Project Mitigation**
  - As part of the project traffic mitigation at the Lake Street/ I-15 NB ramp intersection, restrict project traffic at this interchange and re-route them to the I-15/ Indian Truck Trail interchange during the AM peak hour.
  - As part of the project traffic mitigation at the Menifee Road/ SR 74 intersection, the project proposes to restrict construction traffic during the PM peak hour (4 – 6 p.m.).

The construction traffic would exit the staging area prior to or after the PM peak hour but not during the PM peak hour. Alternatively, the project may also consider providing an alternative access route via Case road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS

ALBERHILL SYSTEM PROJECT

County of Riverside, California
January 11, 2016

LLG Ref. 3-13-2281

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TRAFFIC IMPACT ANALYSIS

ALBERHILL SYSTEM PROJECT

County of Riverside, California
January 11, 2016

1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared the following traffic impact analysis to determine the potential impacts associated with the construction of the Alberhill System (ASP) project. The proposed ASP project would include the construction of the Alberhill Substation on approximately 34 acres of a 124-acre property located on the northwest corner of the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County. In addition, the project would also construct two (2) 500-kV transmission lines, construct one (1) new and modify four (4) existing 115-kV subtransmission lines and install telecommunication lines.

This traffic study has been prepared in accordance to *County of Riverside Traffic Impact Guidelines* and *Caltrans Guide for Preparation of Traffic Impact Studies*. The traffic analysis presented in this report encompasses the following key areas:

- Project Description
- Existing Conditions Assessment
- Traffic Analysis Approach & Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Construction Project Trip Generation, Distribution and Assignment
- Existing + Project Analysis
- Cumulative Projects Discussion
- Near-Term Analysis
- Significant Impacts and Mitigation Measures
- Construction Management Plan

Figure 1–1 shows the project area map.

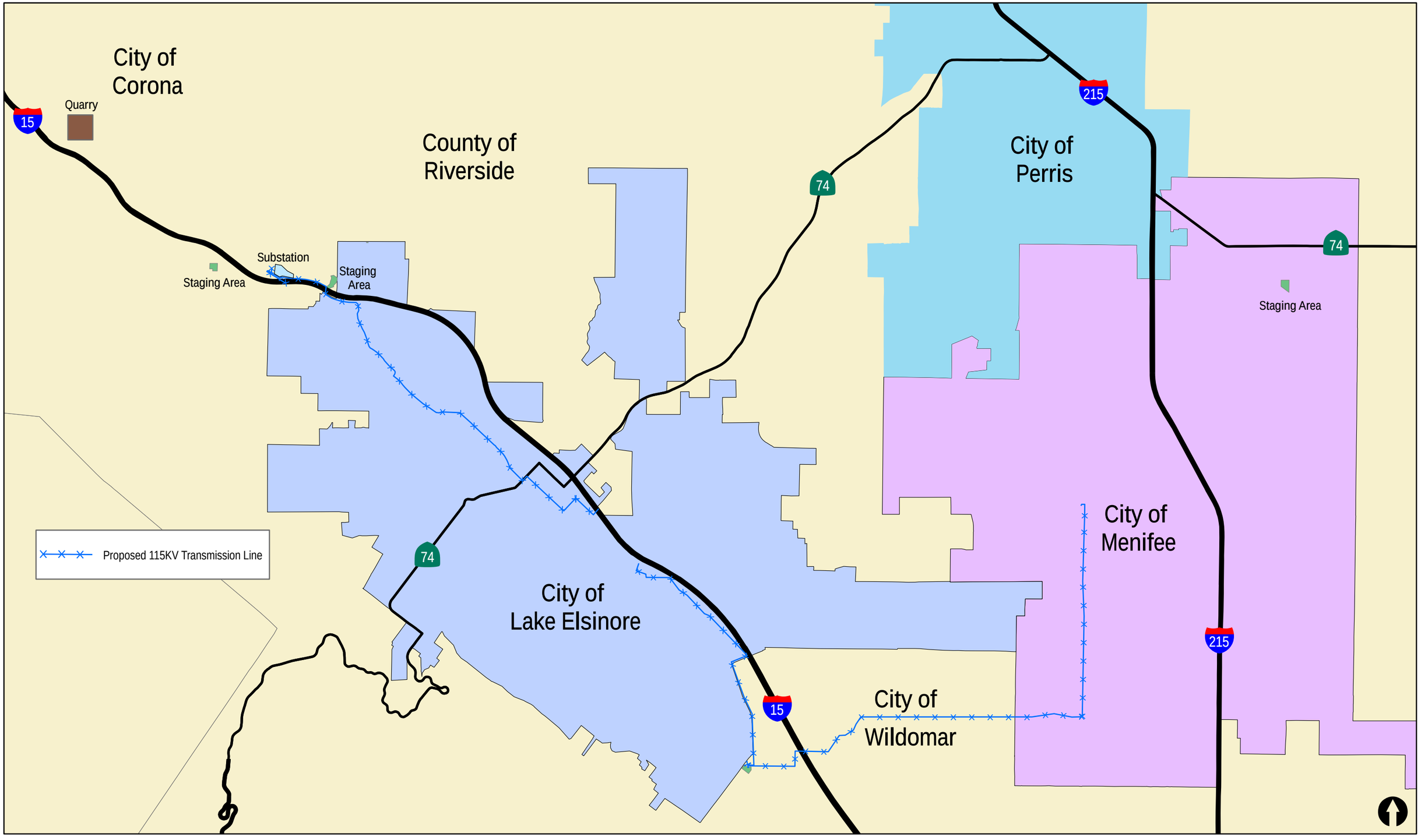

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Figure 1-1

Project Area Map

ALBERHILL SYSTEM PROJECT

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed Alberhill Project would serve the cities of Lake Elsinore, Canyon Lake, Perris, Menifee, Murrieta, Hot Springs, Temecula and Wildomar as well as surrounding unincorporated areas of Riverside County. The Alberhill Substation is proposed to be built on approximately 34 acres of a 124-acre property located on the northwest corner of the Temescal Canyon Road and Concordia Ranch Road intersection. From the Alberhill Substation, the proposed transmission lines would traverse several cities within the County of Riverside.

2.2 Project Description

The ASP Project proposes the following:

- Construct one 1,120 megavolt ampere (MVA) 500/115-kilovolt (kV) substation (Alberhill Substation), expandable to a maximum of 1,680 MVA. The Alberhill Substation is proposed to be built on approximately 34 acres of a 124-acre property located on the northwest corner of the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County.
- Construct two 500-kV transmission lines to connect the proposed substation to the existing Serrano–Valley 500-kV transmission line. The two 500-kV transmission lines would each extend approximately 1 mile northeast to connect to the existing Serrano–Valley 500-kV transmission line.
- Construct one new and modify four existing 115-kV subtransmission lines to transfer five 115/12-kV substations that are currently served by the Valley South 500/115-kV Substation to the new Alberhill 500/115-kV Substation. The 115-kV subtransmission line modifications and construction would occur southeast from the Alberhill Substation to Skylark Substation (approximately 11.5 miles) and from Skylark Substation to Newcomb Substation (approximately 9 miles).
- Install telecommunication lines on the new and replaced transmission/ subtransmission lines.
- Install a 120-foot microwave antenna tower at the proposed Alberhill Substation site. Install microwave telecommunications antennas at the existing Santiago Peak communications site and Serrano Substation. Install telecommunications equipment at other existing and proposed substations

Southern California Edison (SCE) designed the proposed Alberhill Project to meet long-term forecasted electrical demand in the proposed Alberhill Project area and increase electrical system reliability. SCE estimates that construction of the proposed Alberhill Project would take approximately 28 months.

This traffic study analyzes the potential traffic impacts with the construction of the ASP project. The ASP project proposes the construction of the Alberhill Substation and temporary staging areas. Temporary staging areas would be used as a reporting location for workers and to stage equipment

and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic-intensive of the construction activity.

The following substation and staging areas were identified for the Alberhill Project:

Alberhill Substation

The Alberhill Substation is located on Temescal Canyon Road, west of I-15 Frontage Road in the County of Riverside. The Alberhill Substation will also be used as a temporary staging area during the project construction. Attached is an aerial depicting the location of the Alberhill Substation.

Staging Area ASP1

ASP1 is located on Concordia Ranch Road, west of Lake Street in the County of Riverside. ASP1 is approximately 10.3 acres.

Staging Area ASP2

ASP2 is located on Lake Street, north of I-15 in the County of Riverside. ASP2 is approximately 0.3 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP2. ASP2 is shown here for informational purposes only.

Attached is an aerial depicting the location of ASP1 and ASP2.

Staging Area ASP3

ASP3 is located on Horse Thief Canyon Road, south of I-15 in the County of San Diego. ASP3 is approximately 7.4 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP3. ASP3 is shown here for informational purposes only. Attached is an aerial depicting the location of ASP3.

Staging Area ASP4

ASP4 is located on Mission Trail, north of Lemon Street in the City of Lake Elsinore. ASP4 is approximately 6.2 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP4. ASP4 is shown here for informational purposes only.

Staging Area ASP5

ASP5 is located on Corydon Road, west of Mission Trail in the City of Wildomar. ASP5 is approximately 6.1 acres. This staging area is an alternative; hence, no traffic analysis was conducted for ASP5. ASP5 is shown here for informational purposes only.

Staging Area ASP6

ASP6 is located on Mission Trail, south of Bundy Canyon Road in the City of Wildomar. ASP6 is approximately 3.7 acres.

Attached is an aerial depicting the location of ASP4, ASP5 and ASP6.

Staging Area ASP7

ASP7 is located on Menifee Road, south of SR 74 in the City of Menifee. ASP7 is approximately 10.5 acres. Attached is an aerial depicting the location of ASP7.

Corona Quarry

The Corona Quarry is located on Sherborn Street, south of Magnolia Avenue in the City of Corona. The Quarry will be used as a dirt import site during the project construction. Attached is an aerial depicting the location of the Quarry.

3.0 STUDY AREA & EXISTING CONDITIONS

The study area for the proposed project was developed based on the location of the temporary staging areas and the anticipated construction traffic assignment (workers and heavy-vehicles) which will access them.

This traffic study analyzes twenty-six (26) intersections. These intersections were divided into four (4) zones based on their proximity to a proposed staging area.

Table 3–1 contains a list of study area intersections within each zone and their governing jurisdiction. ***Figure 3–1*** shows the study area map.

TABLE 3–1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 1 – Alberhill Substation and 500kV Staging Areas	1. Indian Truck Trail / Temescal Canyon Road	Riverside County
	2. Indian Truck Trail / I-15 Northbound Ramps	Riverside County / Caltrans
	3. Indian Truck Trail / I-15 Southbound Ramps	Riverside County / Caltrans
	4. Indian Truck Trail / Campbell Ranch Road	Riverside County
	5. Horsethief Canyon Road / Temescal Canyon Road	Riverside County
	6. Horsethief Canyon Road / De Palma Road	Riverside County
	7. Concordia Ranch Road / Temescal Canyon Road	Riverside County
	8. Lake Street / I-15 Northbound Ramps	City of Lake Elsinore / Caltrans
	9. Lake Street / I-15 Southbound Ramps	City of Lake Elsinore / Caltrans
	10. Lake Street / Temescal Canyon Road	City of Lake Elsinore
Zone 2 – 115 kV Staging Areas	11. I-15 Northbound Ramps / Railroad Canyon Road	City of Lake Elsinore / Caltrans
	12. I-15 Southbound Ramps / Diamond Drive	City of Lake Elsinore / Caltrans
	13. Diamond Drive / Lakeshore Drive/Mission Trail	City of Lake Elsinore
	14. Mission Trail / Lemon Street	City of Wildomar
	15. Mission Trail / Bundy Canyon Road	City of Wildomar
	16. I-15 Southbound Ramps / Bundy Canyon Road	City of Wildomar / Caltrans
	17. I-15 Northbound Ramps / Bundy Canyon Road	City of Wildomar / Caltrans
Zone 3 – 115 kV Staging Areas	18. I-215 Northbound Ramps / Matthews Road (SR 74)	City of Perris / Caltrans
	19. Menifee Road / Pinacate (SR 74)	City of Menifee / Caltrans
	20. McCall Boulevard / I-215 Southbound Ramps	City of Menifee / Caltrans
	21. McCall Boulevard / I-215 Southbound Ramps	City of Menifee / Caltrans
	22. McCall Boulevard / Menifee Road	City of Menifee

TABLE 3–1
STUDY AREA

Zones	Study Intersections	Jurisdiction
Zone 4 – Corona Quarry	23. I-15 Southbound Ramps / Magnolia Avenue	City of Corona / Caltrans
	24. I-15 Northbound Ramps / Magnolia Avenue	City of Corona / Caltrans
	25. El Camino Avenue/Downs Way / Magnolia Avenue	City of Corona
	26. Sherborn Street / Magnolia Avenue	City of Corona

3.1 Existing Roadway Conditions

The following is a description of the roadways in the project area. ***Figure 3–2*** illustrates the existing intersection configurations.

Temescal Canyon Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 miles per hour (mph).

Campbell Ranch Road is a four-lane, divided roadway in the project area. On-street parking is prohibited on either side of the roadway within the project vicinity. The posted speed limit is 45 mph.

De Palma Road is generally a two-lane, undivided roadway in the project area. West of Santiago Canyon Road, De Palma Road is a four-lane, divided roadway. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 mph.

Indian Truck Trail was recently widened from a two-lane to a four-lane roadway undercrossing at I-15 with dedicated left and right-turn lanes. Traffic signals were installed at three (3) intersections along Indian Truck Trail (Temescal Canyon Road, I-15 NB ramps and I-15 SB ramps). On-street parking is not permitted on either side of the roadway. Sidewalks are provided on the south side. There is no posted speed limit.

Horsethief Canyon Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 40 mph.

Concordia Ranch Road is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. There is no posted speed limit.

Lake Street is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 50 mph.

Diamond Drive is primarily a four-lane, undivided roadway in the project area. Between Lakeshore Drive and Auto Center Drive, Diamond Drive is an eight-lane divided roadway. The posted speed

limit is 30 mph west of Auto Center Drive and 50 mph east of Auto Center Drive. There is no posted speed limit.

Railroad Canyon Road is primarily a four-lane, divided roadway in the project area. The posted speed limit is 50 mph.

Lakeshore Drive is a four-lane, divided roadway in the project area. The posted speed limit speed limit is 45 mph.

Mission Trail is a four-lane, divided roadway in the project area. The posted speed limit is between 45-50 mph.

Lemon Street is a two-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the Project vicinity. There is no posted speed limit.

Bundy Canyon Road is primarily a two-lane, undivided roadway in the project area. The posted speed limit is 45 mph.

SR 74 is a four-lane, undivided roadway in the project area. The posted speed limit is 50 mph.

Pinacate Road (SR 74) is a four-lane, undivided roadway in the project area. On-street parking is not permitted on either side of the roadway within the project vicinity. The posted speed limit is 50 mph.

McCall Boulevard is a four-lane, undivided roadway in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 35 mph.

Menifee Road is a two-lane, undivided roadway north and a four-lane, undivided roadway south of Case Road in the project area. On-street parking is permitted on both sides of the roadway within the project vicinity. The posted speed limit is 55 mph.

Magnolia Avenue is primarily a six-lane, divided roadway in the project area. The posted speed limit is 45 mph.

El Camino Real is a four-lane, divided roadway in the project area. The posted speed limit is 40 mph.

Sherborn Street is a two-lane, undivided roadway in the project area. The posted speed limit is 35 mph.

3.2 Existing Traffic Volumes

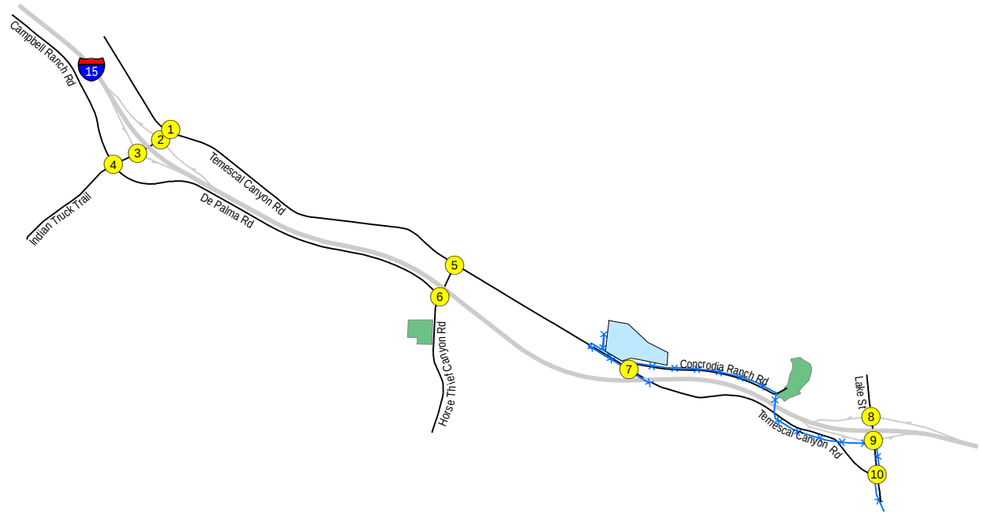
Existing weekday AM and PM peak hour traffic volumes were collected on June 2012 at the key study area intersections to capture peak commuter activity. Supplemental counts from the *Valley-Ivyglen Project* were conducted on Wednesday, August 20, 2014. ***Figure 3–3*** shows the existing AM and PM peak hour turning movement counts.

To verify the appropriateness of the 2012 and 2014 counts, LLG conducted a count validation review. As a part of count validation review, LLG commissioned peak hour traffic counts on Tuesday, June 30, 2015. Based on a review of the counts, the 2015 counts were approximately 5% lower than 2012 and 2014 counts. Therefore, to be conservative, although older, the higher 2012 and 2014 counts were deemed appropriate for the traffic analysis.

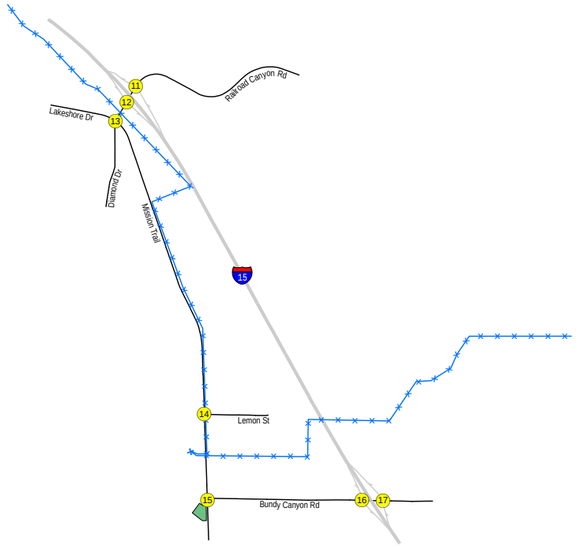
Figure 3–3 shows the existing AM and PM peak hour turning movement counts.

Appendix A contains copies of the intersection manual count sheets.

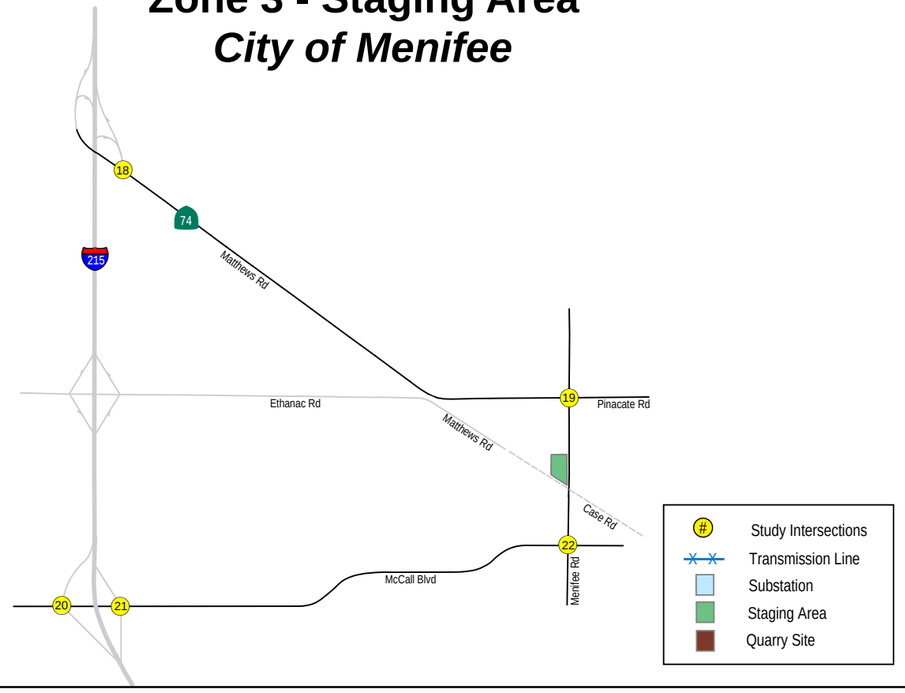
Zone 1 - Ivyglen Substation & Staging Area
Riverside County



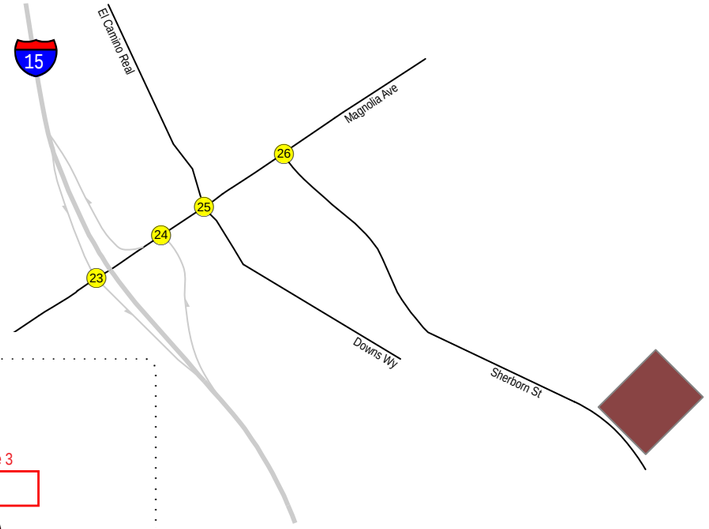
Zone 2 - Staging Area
Riverside County & City of Lake Elsinore



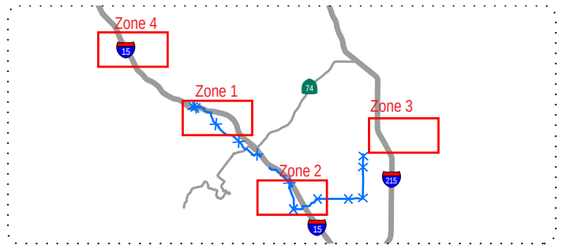
Zone 3 - Staging Area
City of Menifee



Zone 4 - Quarry Site
City of Corona



Key Map



- # Study Intersections
- Transmission Line
- Substation
- Staging Area
- Quarry Site

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Figure 3-1

Study Area

ALBERHILL SYSTEM PROJECT

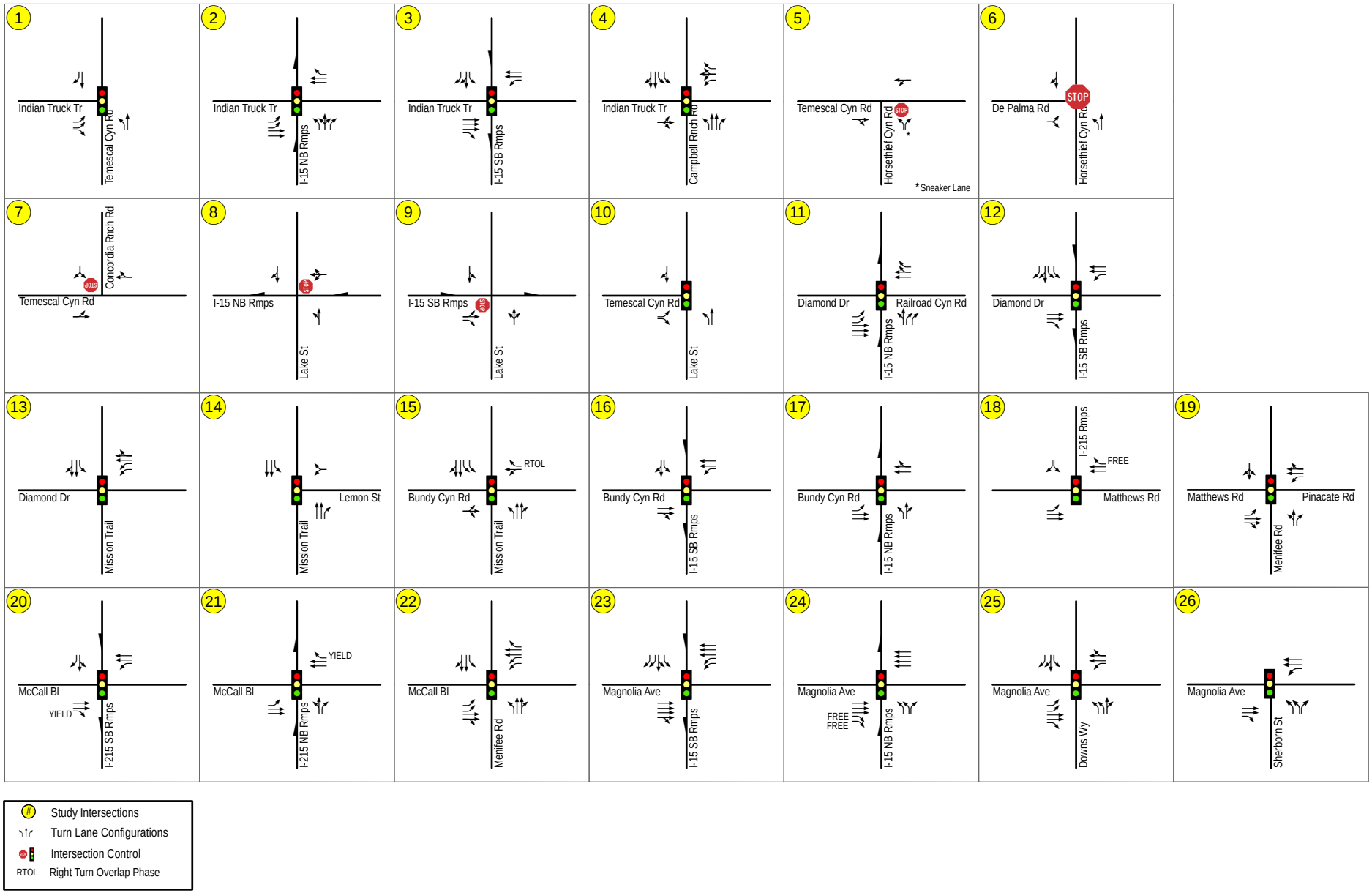

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Figure 3-2

Existing Conditions Diagram

ALBERHILL SYSTEM PROJECT

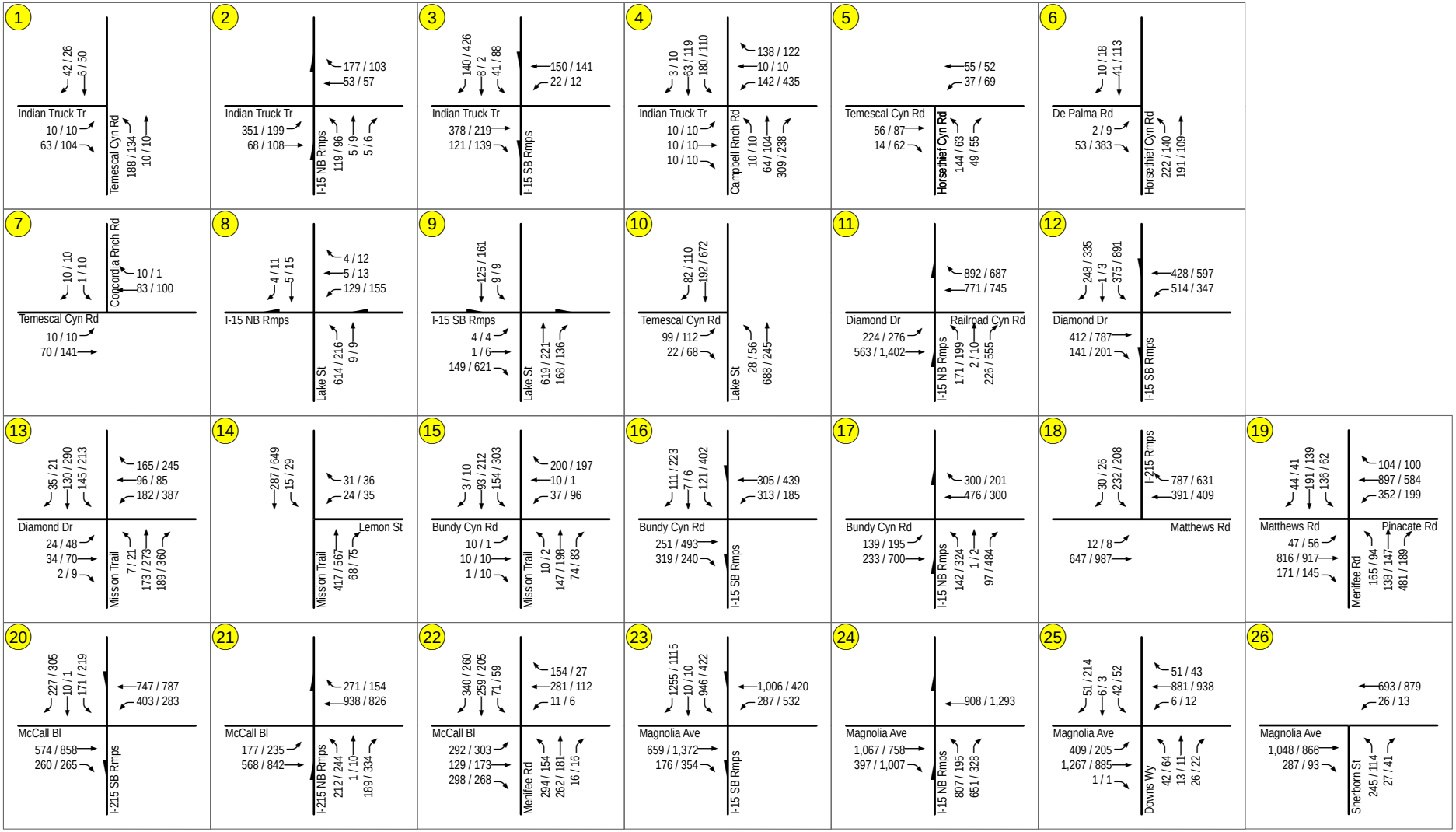

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Figure 3-3

Existing Traffic Volumes

ALBERHILL SYSTEM PROJECT

4.0 ANALYSIS APPROACH AND METHODOLOGY

4.1 Analysis Approach

This traffic study analyzes the potential impacts associated with the construction of the ASP project. The ASP project proposes construction of a substation and temporary staging areas. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic intensive of the construction activity. This traffic analysis takes into account workers and heavy vehicles.

The construction project traffic (100%) was assigned to each staging area and the traffic impacts for Existing + Project and Near-Term conditions were evaluated accordingly. This traffic analysis is considered conservative as it assumes that 100% of the construction traffic will be accessing each staging area concurrently. The concurrent staging area operation may or may not materialize contingent on the final project phasing. In any case, the worst-case scenario was assumed and analyzed.

4.2 Intersection Methodology

Given that the majority of the intersections are in County of Riverside and that other local jurisdictions (such as City of Elsinore and City of Menifee) defer to the regional County guidelines, the traffic analyses for this project are consistent with the guidelines and standards outlined in the *Riverside County Transportation Department Traffic Impact Analysis Preparation Guide, dated April 2008*.

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 9.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in ***Appendix B***.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 19 and Chapter 20 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro*

(version 9.0) computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B.*

5.0 SIGNIFICANCE CRITERIA

The ASP project traverses various jurisdictions in Riverside County. From Alberhill Substation, in the west, the transmission line would traverse areas within the City of Menifee, City of Lake Elsinore, City of Wildomar, unincorporated areas of western Riverside County and Caltrans facilities and Quarry in Corona. The proposed route would cross Interstate 15 (I-15) and State Route 74 (SR 74). This section discusses the traffic impact guidelines for each affected jurisdiction.

5.1 Caltrans Guidelines

Per the *Caltrans Guide for the Preparation of Traffic Impact Studies*, the State "endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities"; but it does not require that LOS "D" be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Therefore, for the purposes of this traffic analysis, the lead agency guidelines were used for intersections that overlap with Caltrans'.

5.2 County of Riverside LOS Requirements

The County of Riverside General Plan considers LOS "C" as the minimum LOS to be maintained along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Urban, Expressways, conventional state highways or freeway ramp intersections. LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

Based on the above, ***Table 5–1*** summarizes the LOS required for each key study intersection located within the jurisdiction of the County of Riverside:

TABLE 5–1
COUNTY OF RIVERSIDE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
1. Indian Truck Trail / Temescal Canyon Road	Urban	LOS D
2. Indian Truck Trail / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
3. Indian Truck Trail / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
4. Indian Truck Trail / Campbell Ranch Road	Urban	LOS D
5. Horse Thief Canyon Road / Temescal Canyon Road	County Maintained Road	LOS C
6. Horse Thief Canyon Road / De Palma Road	County Maintained Road	LOS C
7. Concordia Ranch Road / Temescal Canyon Road	County Maintained Road	LOS C

5.3 City of Lake Elsinore LOS Requirements

The City of Lake Elsinore General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Lake Elsinore. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–2*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Lake Elsinore:

TABLE 5–2
CITY OF LAKE ELSINORE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
8. Lake Street / I-15 Northbound Ramps	Freeway Ramp Intersection	LOS D
9. Lake Street / I-15 Southbound Ramps	Freeway Ramp Intersection	LOS D
10. Lake Street / Temescal Canyon Road	State Route Freeway	LOS D
11. I-15 Northbound Ramps / Railroad Canyon Road	Freeway Ramp Intersection	LOS D
12. I-15 Southbound Ramps / Diamond Drive	Freeway Ramp Intersection	LOS D
13. Diamond Drive / Lakeshore Drive/Mission Trail	Urban	LOS D

5.4 City of Wildomar LOS Requirements

The City of Wildomar General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Wildomar. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–3*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Wildomar:

TABLE 5–3
CITY OF WILDOMAR LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
14. Mission Trail / Lemon Street	Urban	LOS D
15. Mission Trail / Bundy Canyon Road	Urban	LOS D
16. I-15 Southbound Ramps / Bundy Canyon Road	Freeway Ramp Intersection	LOS D
17. I-15 Northbound Ramps / Bundy Canyon Road	Freeway Ramp Intersection	LOS D

5.5 City of Perris LOS Requirements

The City of Perris General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Perris. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–4*** summarizes the LOS required for the study intersection located within the jurisdiction of the City of Perris:

TABLE 5–4
CITY OF PERRIS LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
18. I-215 NB Ramps / SR 74	Freeway Ramp Intersection	LOS D

5.6 City of Menifee LOS Requirements

The City of Menifee has also adopted the County of Riverside criteria to assess the impact of the Proposed Project. Based on the County of Riverside General Plan, the County of Riverside considers LOS "C" as the minimum LOS to be maintained along all County maintained roads and conventional state highways. As an exception, LOS "D" may be allowed in Community Development area, only at intersections of any combination of Secondary Highways, Major Highways, Urban, Expressways, conventional state highways or freeway ramp intersections. LOS "E" may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.

As stated above and based on the combination of Secondary Highways or higher, LOS "D" is the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Menifee. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F."

Table 5–5 summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Menifee:

TABLE 5–5
CITY OF MENIFEE LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
19. Menifee Road / Pinacate Road (SR 74)	State Route Freeway	LOS D
20. McCall Boulevard / I-215 Southbound Ramps	Freeway Ramp Intersection	LOS D
21. McCall Boulevard / I-215 Northbound Ramps	Freeway Ramp Intersection	LOS D
22. McCall Boulevard / Menifee Road	Secondary Highway	LOS D

5.7 City of Corona LOS Requirements

The City of Corona General Plan Update considers LOS "D" as the minimum acceptable condition that should be maintained during the AM and PM peak hours for all study intersections within the jurisdiction of the City of Corona. Impacts to the intersections shall be considered significant if the intersections operate at LOS "E" or "F".

Based on the above, ***Table 5–6*** summarizes the LOS required for each key study intersection located within the jurisdiction of the City of Corona:

TABLE 5–6
CITY OF CORONA LOS REQUIREMENTS

Study Area Intersections	Roadway Type	Minimum Acceptable LOS
23. I-15 Southbound Ramps / Magnolia Avenue	Freeway Ramp Intersection	LOS D
24. I-15 Northbound Ramps / Magnolia Avenue	Freeway Ramp Intersection	LOS D
25. El Camino Avenue / Downs Way / Magnolia Avenue	Urban	LOS D
26. Sherborn Street / Magnolia Avenue	Urban	LOS D

6.0 EXISTING ANALYSIS

This section discusses the existing operations of the study area intersections using the methodologies described in *Section 5.0*.

Table 6–1 summarizes the existing intersection Levels of Service. As seen in *Table 6–1*, all of the study area intersections were calculated to currently operate at acceptable LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour)

The Lake Street/ I-15 NB ramp intersection is calculated to operate at deficient LOS due to the heavy northbound left-turn demand (uncontrolled) on to the I-15 on-ramp in the AM peak hour. This causes excessive delays to the WBL from off-ramp due to the lack of acceptable gaps in the traffic stream.

Menifee Road/ SR 74 is calculated to operate at deficient LOS due to heavy traffic volumes that are served by limited intersection geometry (one lane approaches) on the north and south legs combined with inefficient signal phasing (split phasing).

Appendix C contains the intersection analysis sheets for the Existing scenario.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing	
					Delay[a]	LOS[b]
***Zone 1* – Alberhill Substation and Staging Area**						
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM PM	49.6 43.2	D D
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM PM	38.6 31.6	D C
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM PM	25.2 29.7	C C
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM PM	38.7 37.2	D D
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[c]	AM PM	11.2 11.7	B B
6. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[d]	AM PM	9.6 11.3	A B
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM PM	9.0 9.8	A A
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM PM	**374.9** 18.7	**F** C
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM PM	17.8 25.2	C D
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM PM	7.8 13.8	A B
***Zone 2* – Staging Area**						
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of lake Elsinore / Caltrans	D	Signal	AM PM	21.5 27.0	C C
12. I-15 Southbound Ramps/ Diamond Dr	City of lake Elsinore / Caltrans	D	Signal	AM PM	37.7 43.5	D D
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM PM	41.7 49.0	D D
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM PM	6.1 6.0	A A

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing	
					Delay[a]	LOS[b]
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B
				PM	18.5	B
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C
				PM	33.0	C
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C
				PM	38.6	D
***Zone 3* – Staging Area**						
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A
				PM	8.1	A
19. Menifee Rd/ SR 74	City of Perris / Caltrans	D	Signal	AM	**144.6**	**F**
				PM	53.4	D
20. McCall Blvd/ I-215 Southbound Ramps	City of Perris / Caltrans	D	Signal	AM	37.7	D
				PM	32.5	C
21. McCall Blvd/ I-215 Northbound Ramps	City of Perris	D	Signal	AM	23.1	C
				PM	37.0	D
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.1	D
				PM	29.1	C
***Zone 4* – Corona Quarry**						
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	36.4	D
				PM	43.9	D
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	28.9	C
				PM	23.4	C
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.1	D
				PM	30.9	C
26. Sherborn St/ Magnolia Ave	City of Corona	D	Signal	AM	15.8	B
				PM	20.3	C

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.
2. Grayscale denotes intersection overlap with zones, hence same delays are reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

7.0 CONSTRUCTION PROJECT TRIP GENERATION/ DISTRIBUTION/ ASSIGNMENT

7.1 Construction Background

The proposed Alberhill Project includes the construction of the Alberhill Substation, two (2) 500-kV transmission line, one (1) new and modify four (4) existing 115-kV subtransmission lines and install telecommunications lines. The construction workforce is anticipated to include 100 construction workers and 93 heavy vehicles for the Alberhill Substation, 100 construction workers and 40 heavy vehicles for the staging areas located in Zone 1, 45 construction workers and 40 heavy vehicles for the staging areas located in Zones 2 and 3 and 10 construction workers and 72 heavy vehicles for dirt import activity from the Corona Quarry.

7.2 Trip Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the project site. ***Tables 7–1a, 7–1b*** and ***7–1c*** presents the project's construction trip generation. As discussed previously, the Alberhill System Project study area is anticipated to include four (4) zones.

- *Zone 1*, includes the construction of the Alberhill Substation and a staging area. The Alberhill Substation is comprised of 100 construction workers and 93 heavy vehicles. The staging area is comprised of 100 construction workers and 40 heavy vehicles.
- *Zones 2* and *3*, each includes the construction of a staging area, which comprises of 45 construction worker vehicles and 40 heavy vehicles.
- *Zone 4*, includes the dirt import trips from the Corona Quarry dirt import site, which comprises of 10 construction worker vehicles and 72 heavy vehicles.

The trip generation of the proposed project was estimated based on the following assumptions.

- A six-day work week (Monday through Saturday from 7:00 AM to 7:00 PM) is anticipated. For purposes of traffic analyses, the typical and more critical weekday commuter peaks were analyzed.

- Given that the work day start time is at 7:00 AM, it is assumed that the construction workers would arrive before the AM commuter peak hour (7:00 AM to 9:00 AM). However, the construction workers would leave during the PM commuter peak hour (4:00 PM to 6:00PM), to be conservative. It should be noted that even though SCE encourages carpooling among workers, to be conservative, the analyses assumes no carpooling.

- The delivery trucks and dirt trucks would arrive/depart in the AM and PM peak hours, but will deliver materials throughout the day. Therefore, 20% of the truck traffic was assumed in the AM and 20% during the PM peak hours. A total of 40% of truck traffic was assumed in the peak hours.

- Additionally, the heavy vehicle traffic is converted to Passenger Car Equivalent (PCE) trips using the Highway Capacity Manual (2010) approved factors. According to Highway

Capacity Manual 2010, PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since:

- They are larger than passenger cars, and therefore, occupy more roadway space; and their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream, which cannot always be effectively filled by normal passing maneuvers.

- *Exhibit 14-12,* PCE's for Heavy Vehicles in General Terrain Segments, (obtained from "Highway Capacity Manual prepared by Transportation Research Board," dated Year 2010) summarizes PCE factors for various types of vehicles. The type of terrain in the project area was conservatively assumed as "rolling" and the corresponding passenger car equivalents of 2.5 for trucks was used. *Appendix C* includes the PCE factors.

Zone 1, is calculated to generate total of 1,065 ADT with 67 inbound / 66 outbound trips during the AM peak hour and 67 inbound / 266 outbound trips during the PM peak hour.

Zones 2 and *3*, are calculated to generate total of 290 ADT with 20 inbound / 20 outbound trips during the AM peak hour and 20 inbound / 65 outbound trips during the PM peak hour.

Zone 4, is calculated to generate total of 380 ADT with 36 inbound / 36 outbound trips during the AM peak hour and 36 inbound / 46 outbound trips during the PM peak hour.

7.3 Construction Project Trip Distribution/Assignment

The ASP project proposes temporary staging areas that are anticipated to be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic intensive of the construction traffic (workers and heavy vehicles) for trip distribution and assignment purposes. Furthermore, to analyze a worst-case scenario, this traffic analysis assumes that 100% of the construction traffic will be accessing each staging area concurrently. Although no trips were assigned to intersections #4 and 6, it was included in the analysis as due to potential impacts from adjacent intersections.

The construction project traffic (100%) was assigned to the substation and each staging area. Project traffic volumes, both entering and exiting the Project sites, have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes (i.e. I-15 Freeway, I-215 Freeway, etc.),
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,

- presence of traffic congestion in the surrounding vicinity,
- existing traffic volumes, and
- delivery and construction routes.

It is also important to note that the project proposes alternative staging areas (in Zone 1 and Zone 2). For the purpose of this analysis, only the preferred staging areas were analyzed. Given the locations of the alternative staging areas and the current intersection operations that would be serving these areas, no change in analysis or new impacts are anticipated.

Figures 7–1 to ***7–4*** shows the project's regional traffic distribution for *Zones 1–4* respectively. ***Figures 7–5*** to ***7–8*** shows the project assignment for *Zones 1–4* respectively. ***Figure 7–9*** shows the total project assignment.

TABLE 7–1A
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 1

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Alberhill Substation														
Construction Worker[b]	100	1.0	2 / employee	200	0%	0 : 0	0	0	0	50%	0 : 100	0	100	100
Heavy Vehicles[c]	93	2.5	2 / truck	465	20%	50 : 50	47	46	93	20%	50 : 50	47	46	93
Subtotal				*665*			*47*	*46*	*93*			*47*	*146*	*193*
Staging Area														
Construction Worker[b]	100	1.0	2 / employee	200	0%	0 : 0	0	0	0	50%	0 : 100	0	100	100
Heavy Vehicles[c]	40	2.5	2 / truck	200	20%	50 : 50	20	20	40	20%	50 : 50	20	20	40
Subtotal				*400*			*20*	*20*	*40*			*20*	*120*	*140*
Total				***1,065***			***67***	***66***	***133***			***67***	***266***	***333***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 7–1B
CONSTRUCTION PROJECT TRIP GENERATION – ZONES 2 AND 3

Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Staging Area														
Construction Worker[b]	45	1.0	2 / employee	90	0%	0 : 0	0	0	0	50%	0 : 100	0	45	45
Heavy Vehicles[c]	40	2.5	2 / truck	200	20%	50 : 50	20	20	40	20%	50 : 50	20	20	40
Total				***290***			***20***	***20***	***40***			***20***	***65***	***85***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.

TABLE 7–1C
CONSTRUCTION PROJECT TRIP GENERATION – ZONE 4

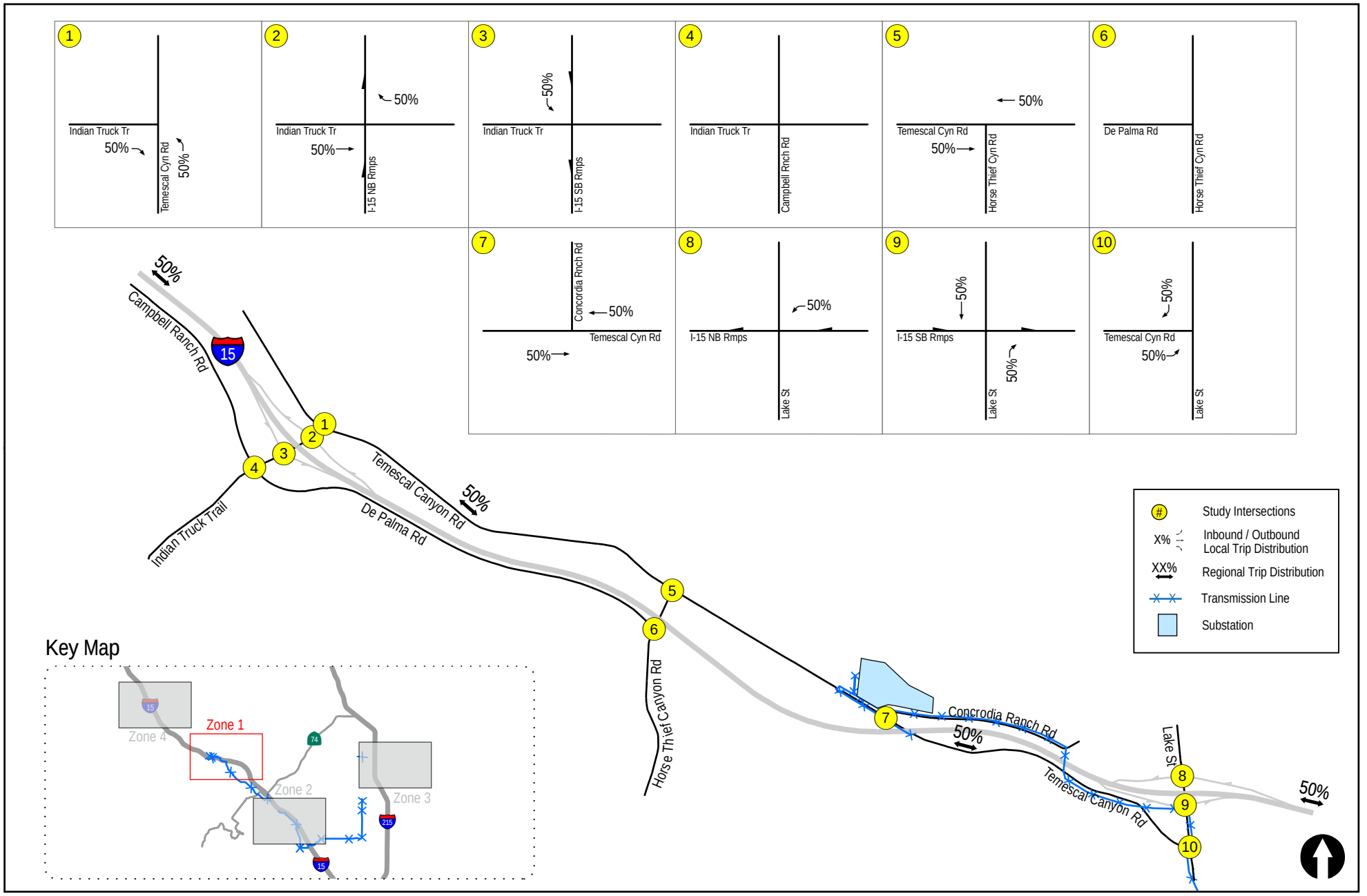
Use	Vehicles Per Day	PCE Factor	Daily Trips		AM Peak Hour					PM Peak Hour				
			Rate	ADT[a]	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Corona Quarry														
Construction Worker[b]	10	1.0	2 / employee	20	0%	0 : 0	0	0	0	50%	0 : 100	0	10	10
Heavy Vehicles[b]	72	2.5	2 / truck	360	20%	50 : 50	36	36	72	20%	50 : 50	36	36	72
Total				***380***			***36***	***36***	***72***			***36***	***46***	***82***

Footnotes:

a. ADT – average daily traffic.

b. Construction workers are expected to arrive prior to the AM commuter peak hour. However, all construction workers are expected to depart during the PM commuter peak hour. To be conservative, no carpooling was assumed.

c. Heavy vehicles are expected to arrive in the AM peak hour and continue throughout the day given a typical 12-hour work day; therefore, 20% of the heavy vehicle traffic was assumed during the AM and PM peak hour.



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Date: 07/28/15

Figure 7-1a

Project Traffic Distribution - Zone 1 Alberhill Substation
(Construction Workers)

ALBERHILL SYSTEM PROJECT

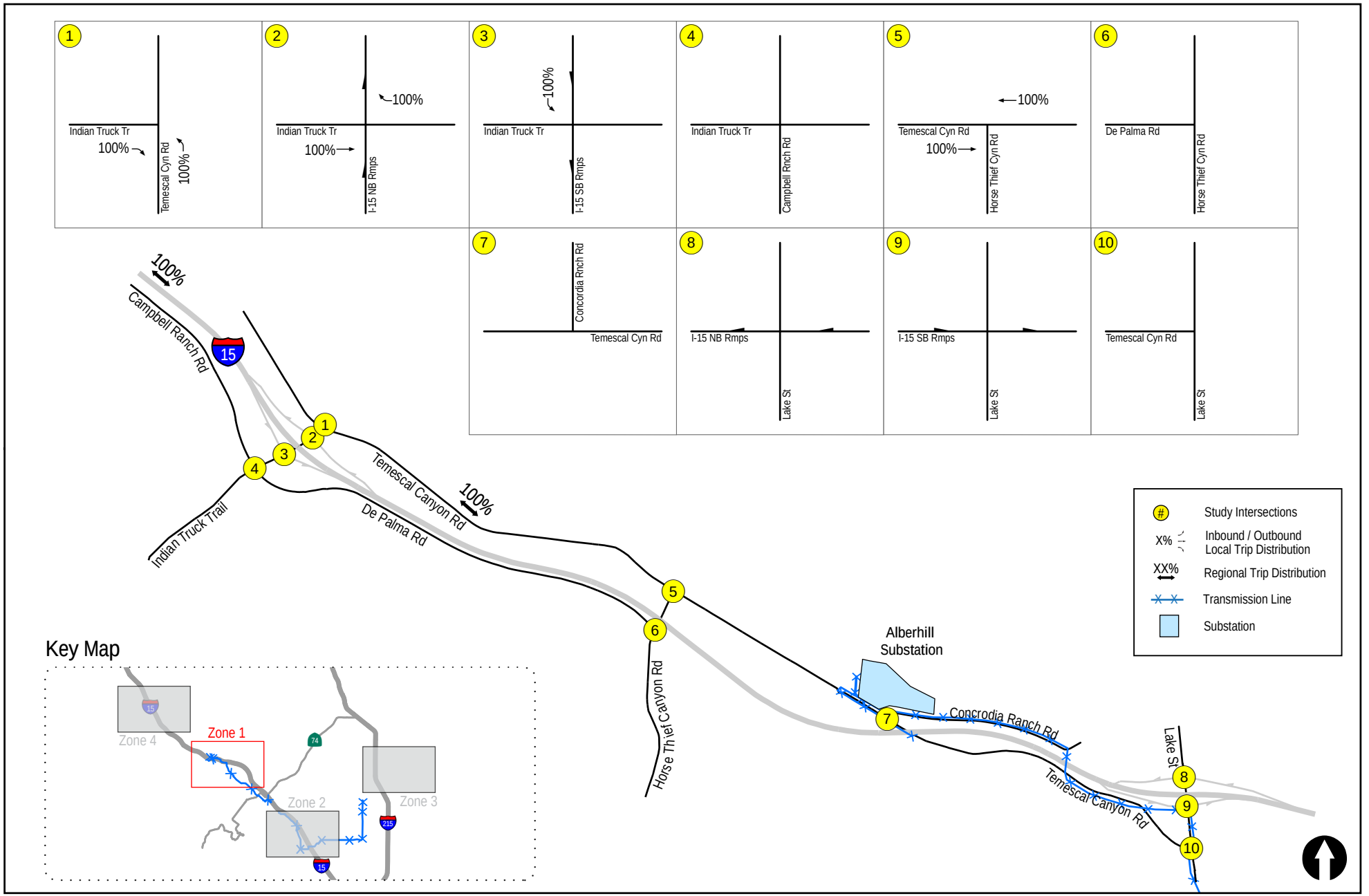

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Figure 7-1b

Project Traffic Distribution - Zone 1 Alberhill Substation

(Heavy Vehicles - Dirt Import)

ALBERHILL SYSTEM PROJECT

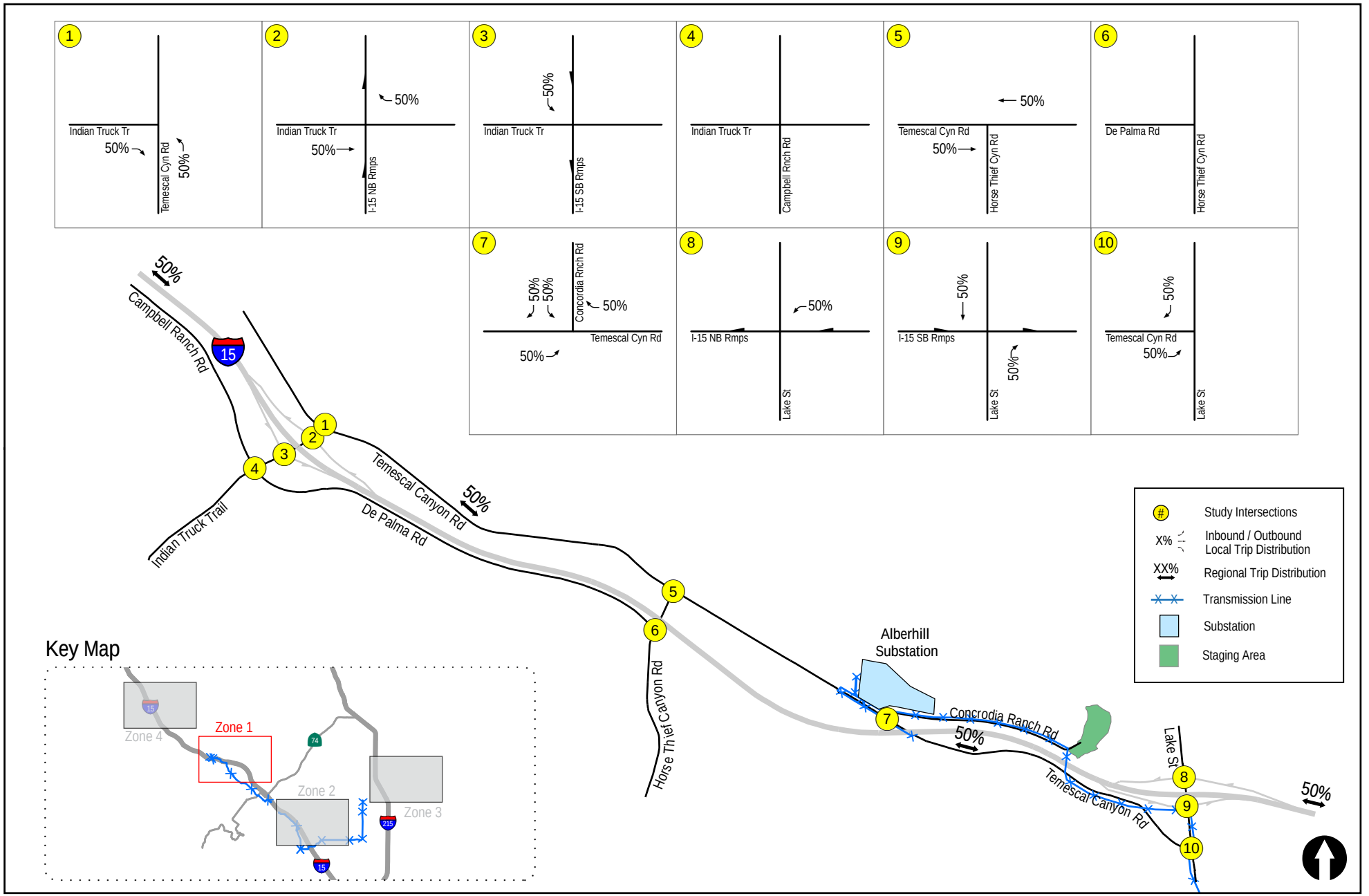

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Figure 7-1c

Project Traffic Distribution - Zone 1 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

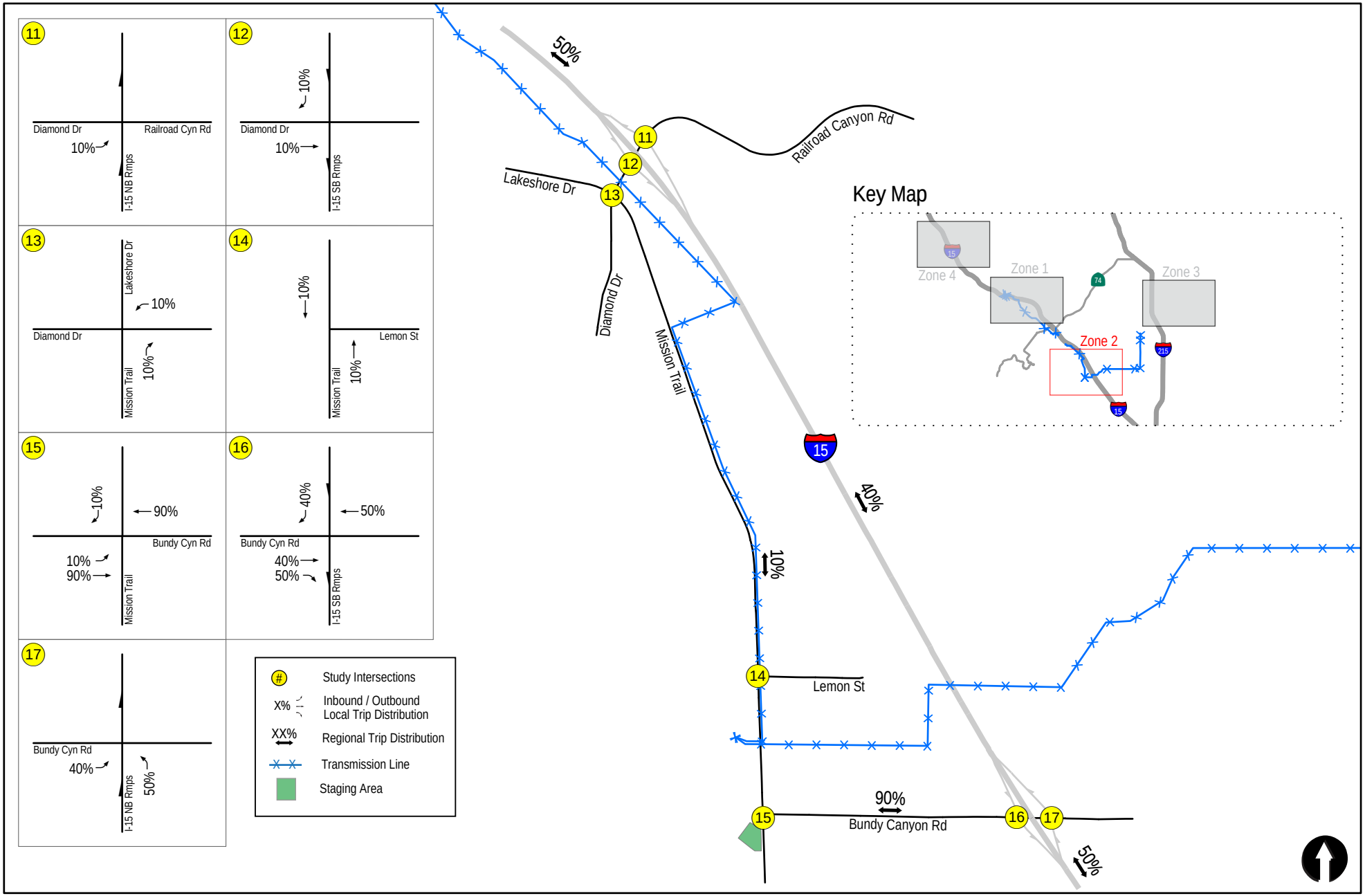

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Figure 7-2

Project Traffic Distribution - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

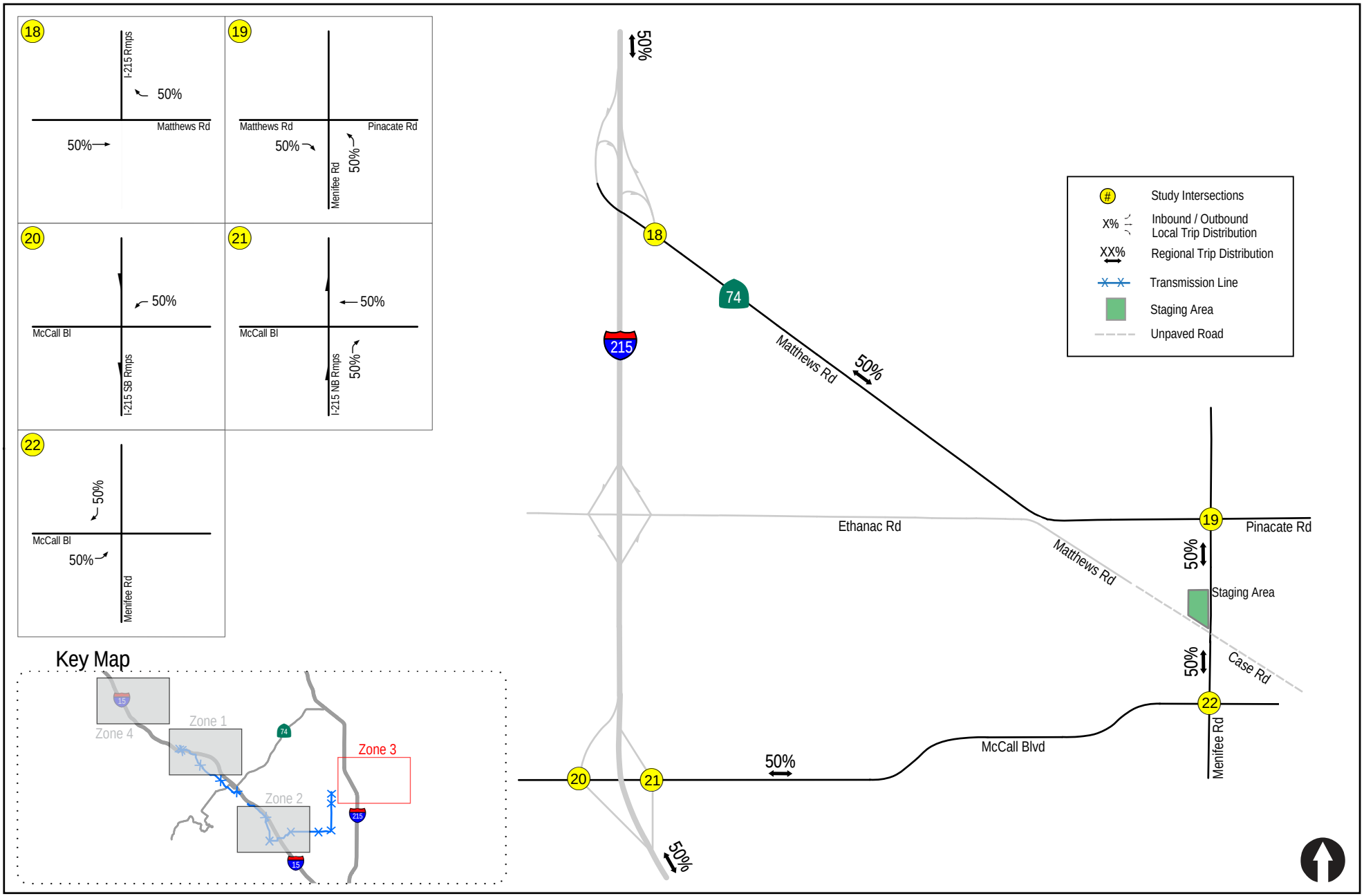

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Figure 7-3

Project Traffic Distribution - Zone 3 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

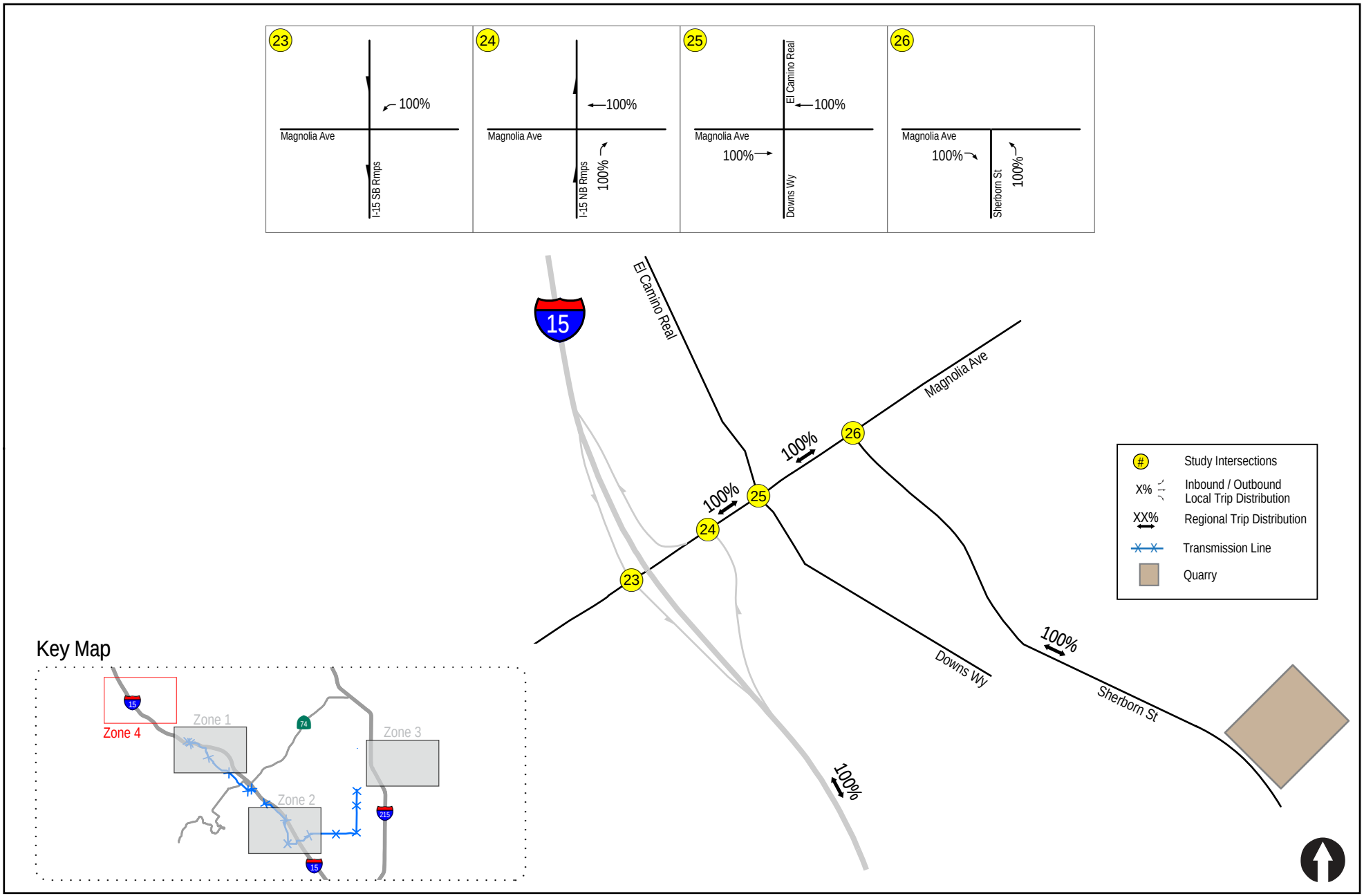

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Figure 7-4

Project Traffic Distribution - Zone 4 Quarry
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

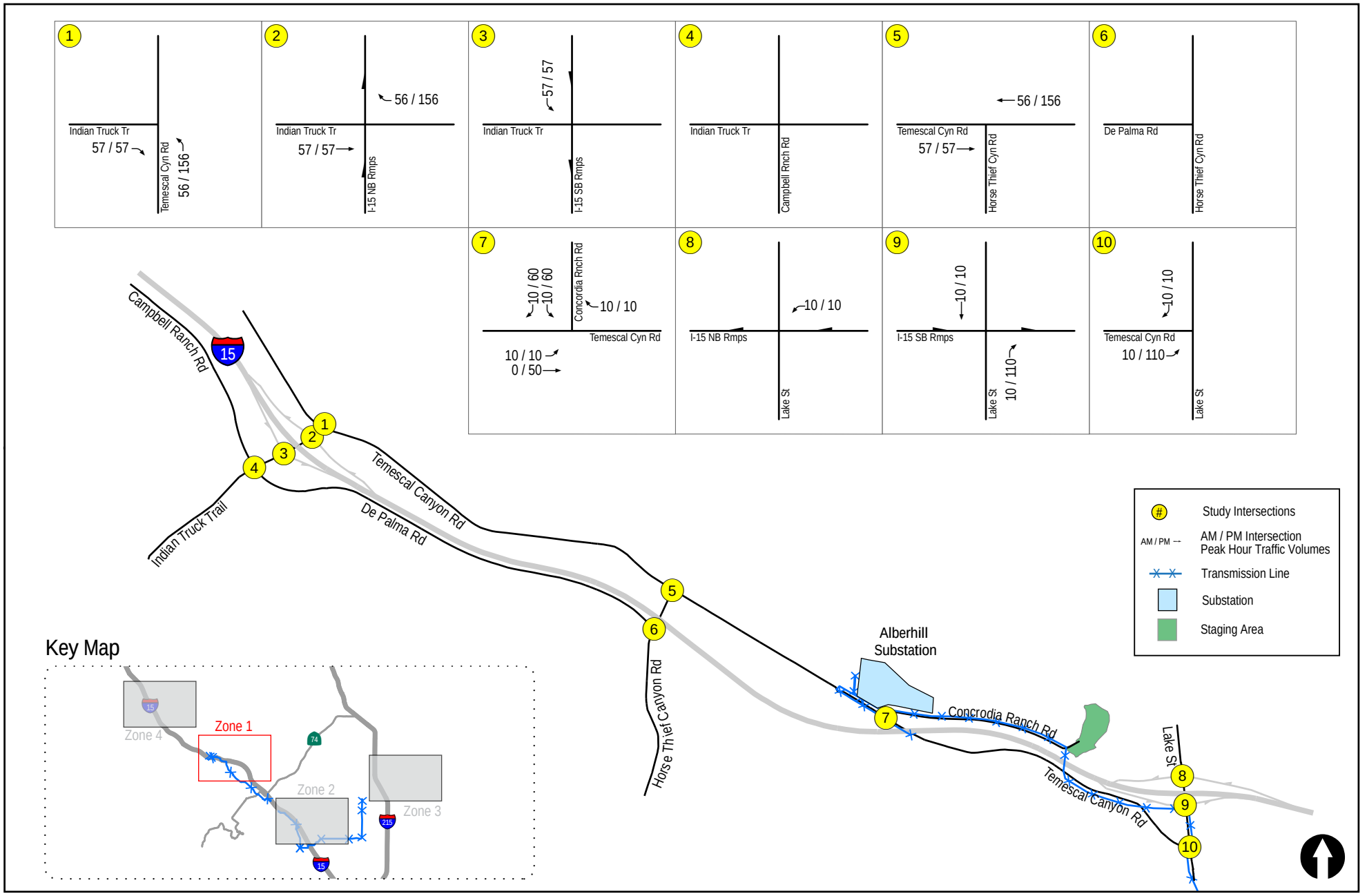

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Figure 7-5

Project Traffic Volumes - Zone 1 Alberhill Substation & Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

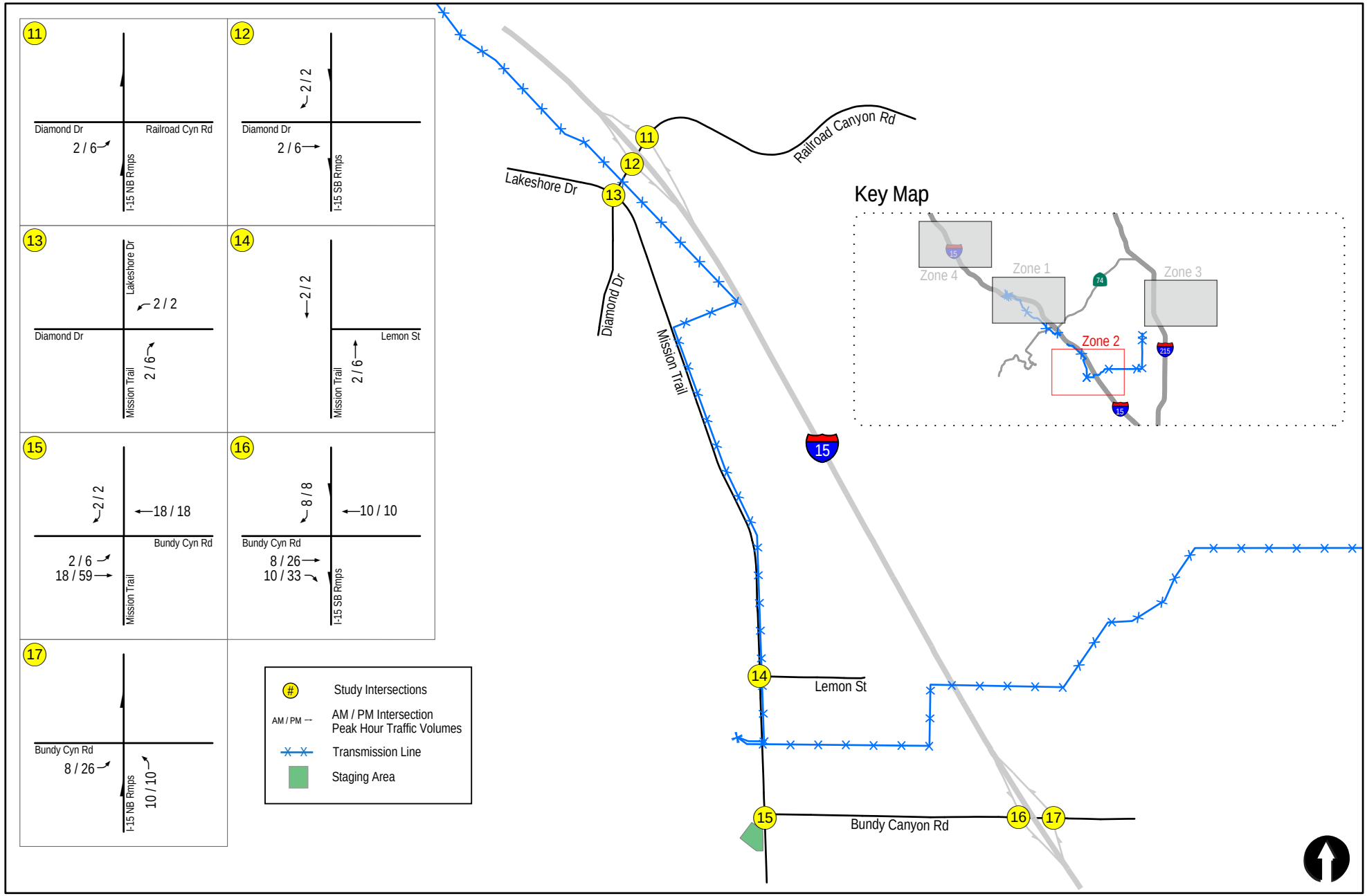

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Figure 7-6

Project Traffic Volumes - Zone 2 Staging Area

(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

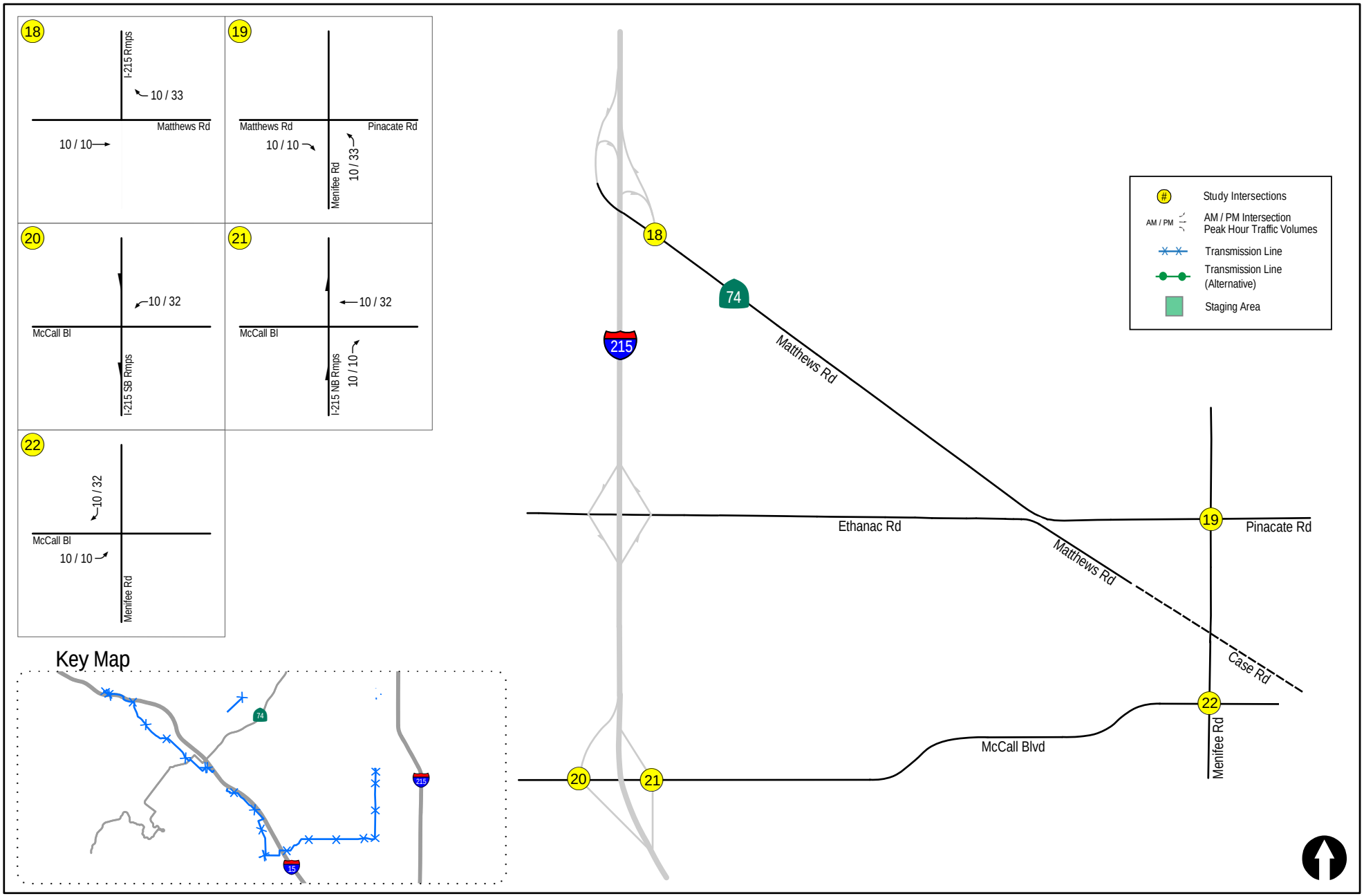

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Figure 7-7

Project Traffic Volumes - Zone 3 Staging Area
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

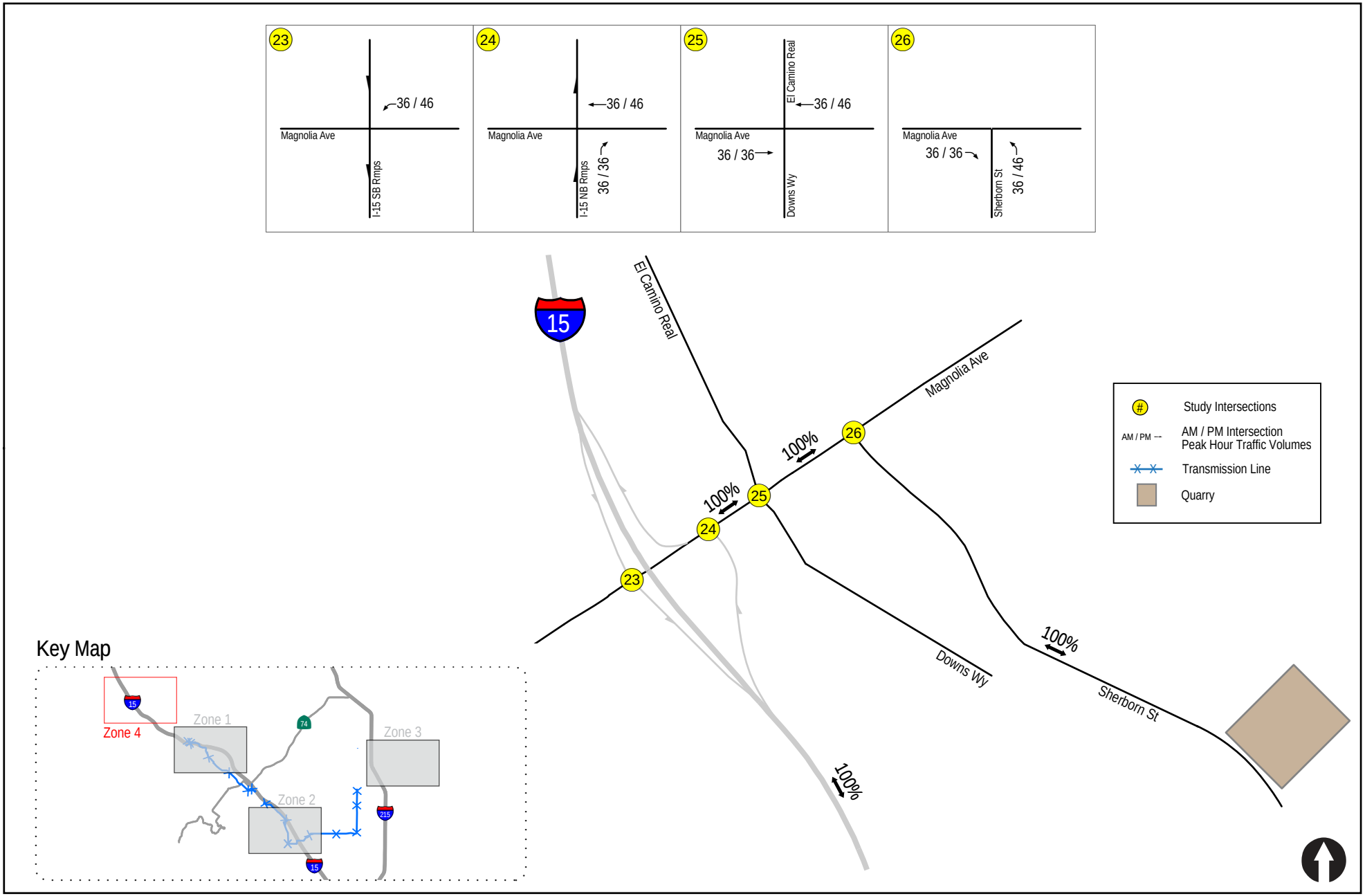

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Figure 7-8

Project Traffic Volumes - Zone 4 Quarry
(Construction Workers & Heavy Vehicles)

ALBERHILL SYSTEM PROJECT

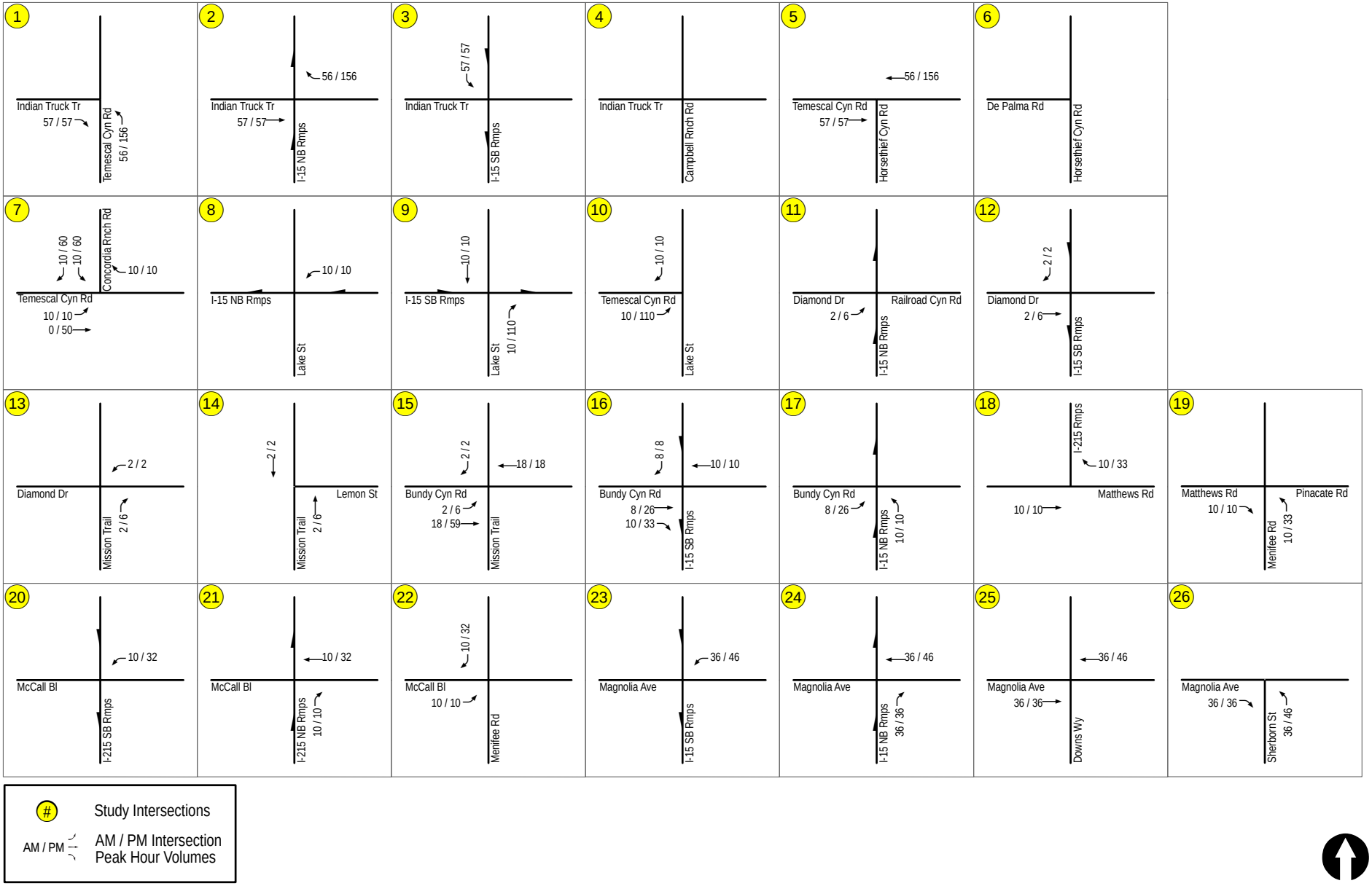

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Figure 7-9

Total Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

8.0 EXISTING + PROJECT ANALYSIS

The California Environmental Quality Act (CEQA) Guidelines and recent court cases suggest the assessment of existing (ground) conditions with project build-out conditions. Thus, the Existing + Project analysis presumes the full build out of the project under the existing environmental conditions (existing traffic volumes, existing roadway infrastructure, and existing surrounding land uses).

Project trip distribution and assignment for the Existing + Project scenario was assumed to be the same as for the Near-Term scenario. ***Figure 8–1*** illustrates the Existing + Project traffic volumes.

8.1 Existing + Projects

Table 8–1 summarizes the Existing + Project intersections level of service. As seen in *Table 8–1*, all intersections were calculated to continue to operate at LOS D or better under Existing + Project conditions with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Based on the LOS thresholds outlined in *Section 5.0,* **significant impacts** are identified at the following intersections as they are calculated to operate at a deficient LOS:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS E during the PM peak hour)

Appendix D contains the Existing + Project intersection analysis worksheets.

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 1* – Alberhill Substation and Staging Area**										
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM	49.6	D	49.9	D	0.3	-
				PM	43.2	D	47.8	D	4.6	-
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM	38.6	D	38.7	D	0.1	-
				PM	31.6	C	32.0	C	0.4	-
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM	25.2	C	29.5	C	4.3	-
				PM	29.7	C	29.8	C	0.1	-
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM	38.7	D	38.7	D	0.0	-
				PM	37.2	D	37.2	D	0.0	-
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[d]	AM	11.2	B	12.7	B	1.5	-
				PM	11.7	B	14.7	B	3.0	-
6. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[e]	AM	9.6	A	9.6	A	0.0	-
				PM	11.3	B	11.3	B	0.0	-
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM	9.0	A	9.5	A	0.5	-
				PM	9.8	A	11.3	B	1.5	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	**374.9**	**F**	**429.6**	**F**	**54.7**	**Yes**
				PM	18.7	C	19.4	C	0.7	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	17.8	C	18.1	C	0.3	-
				PM	25.2	D	26.4	D	1.2	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM	7.8	A	8.0	A	0.2	-
				PM	13.8	B	20.5	C	6.7	-

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 2* – Staging Area**										
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of lake Elsinore / Caltrans	D	Signal	AM	21.5	C	21.6	C	0.1	-
				PM	27.0	C	27.1	C	0.1	-
12. I-15 Southbound Ramps/ Diamond Dr	City of lake Elsinore / Caltrans	D	Signal	AM	37.7	D	37.8	D	0.1	-
				PM	43.5	D	43.5	D	0.0	-
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM	41.7	D	41.7	D	0.0	-
				PM	49.0	D	49.4	D	0.4	-
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM	6.1	A	6.1	A	0.0	-
				PM	6.0	A	6.0	A	0.0	-
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B	17.8	B	0.3	-
				PM	18.5	B	19.2	B	0.7	-
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C	28.8	C	1.6	-
				PM	33.0	C	33.7	C	0.7	-
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C	23.2	C	0.6	-
				PM	38.6	D	39.7	D	1.1	-
***Zone 3* – Staging Area**										
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A	8.6	A	0.0	-
				PM	8.1	A	8.1	A	0.0	-
19. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee / Caltrans	D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-
				PM	53.4	D	**55.3**	**E**	**1.9**	**Yes**
20. McCall Blvd/ I-215 Southbound Ramps	City of Menifee / Caltrans	D	Signal	AM	37.7	D	38.0	D	0.3	-
				PM	32.5	C	33.7	C	1.2	-

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
21. McCall Blvd/ I-215 Northbound Ramps	City of Menifee	D	Signal	AM	23.1	C	23.3	C	0.2	-
				PM	37.0	D	37.5	D	0.5	-
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.1	D	39.6	D	0.5	-
				PM	29.1	C	29.2	C	0.1	-
***Zone 4* – Corona Quarry**										
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	36.4	D	37.3	D	0.9	-
				PM	43.9	D	44.6	D	0.7	-
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	28.9	C	29.4	C	0.5	-
				PM	23.4	C	23.7	C	0.3	-
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.1	D	38.9	D	0.8	-
				PM	30.9	C	31.4	C	0.5	-
26. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	15.8	B	16.0	B	0.2	-
				PM	20.3	C	20.5	C	0.2	-

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

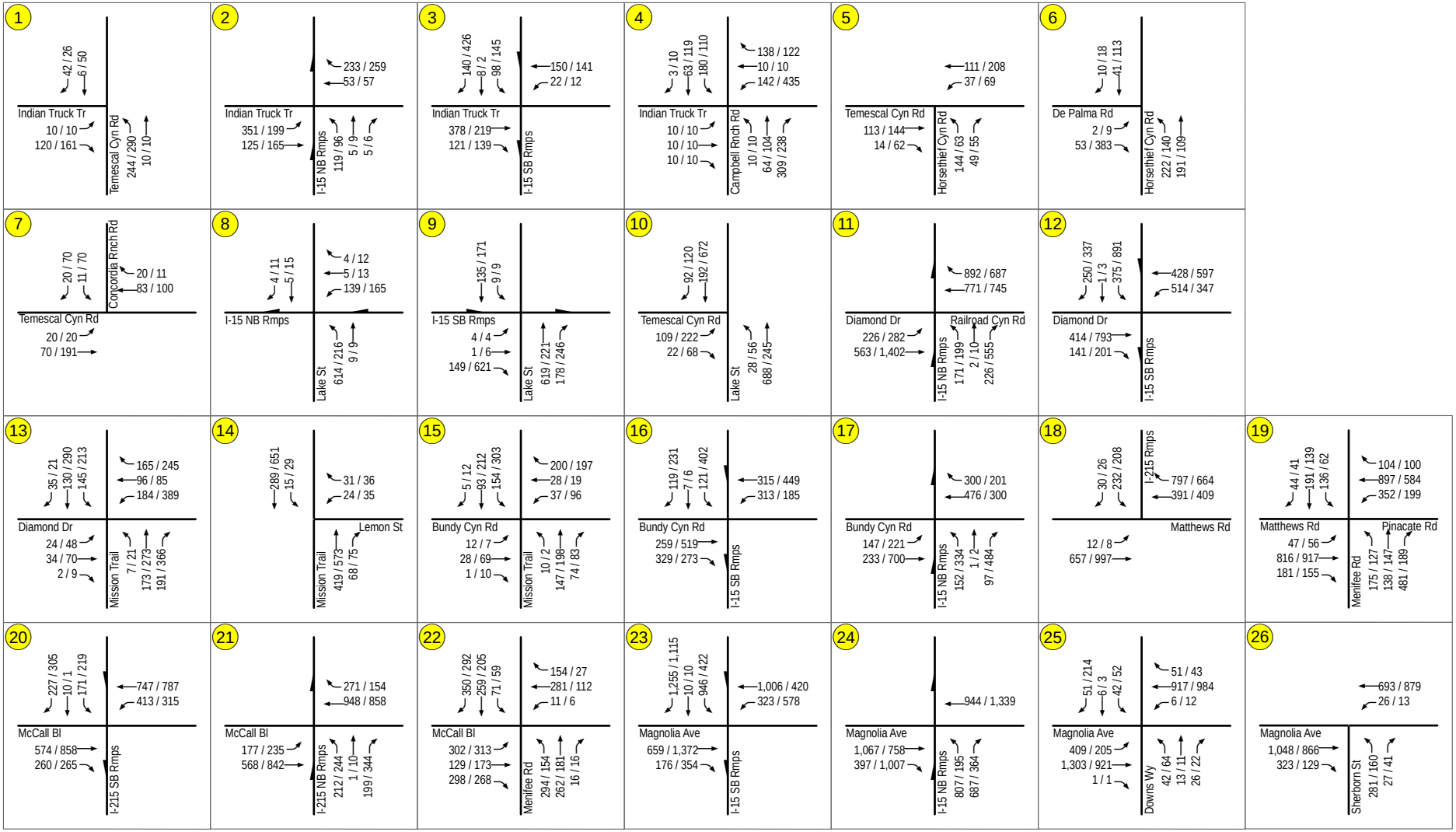

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Figure 8-1

Existing + Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

9.0 CUMULATIVE PROJECTS

Cumulative projects represent reasonably foreseeable planned development that contributes to background traffic conditions for the Near-Term scenario. Based on a review of potential development in the area, the Valley-Ivyglen Project was considered and included in this traffic study. The following is a brief description of the cumulative project.

VALLEY-IVYGLEN PROJECT

The proposed VIG project would involve the construction of a new, single-circuit 115-kV sub-transmission line and fiber optic line. The transmission line would be approximately 27-miles long and be constructed within approximately 23 miles of new right-of-way (ROW). The applicant estimates that construction of the proposed Valley–Ivyglen Project would take approximately 27 months.

The VIG project proposes to use temporary staging areas, which include a combination of existing substations (Valley and Ivyglen) and undeveloped parcels. Temporary staging areas would be used as a reporting location for workers and to stage equipment and materials during construction. Therefore, the staging areas are considered as the primary access point and most traffic-intensive of the construction activity.

The Valley-Ivyglen Project study area includes four (4) zones. All zones includes the construction of a staging areas, which comprises of 125 construction worker vehicles and 28 heavy vehicles generating 390 average daily trips (ADT's).

Figure 9–1 shows the cumulative projects traffic volumes.

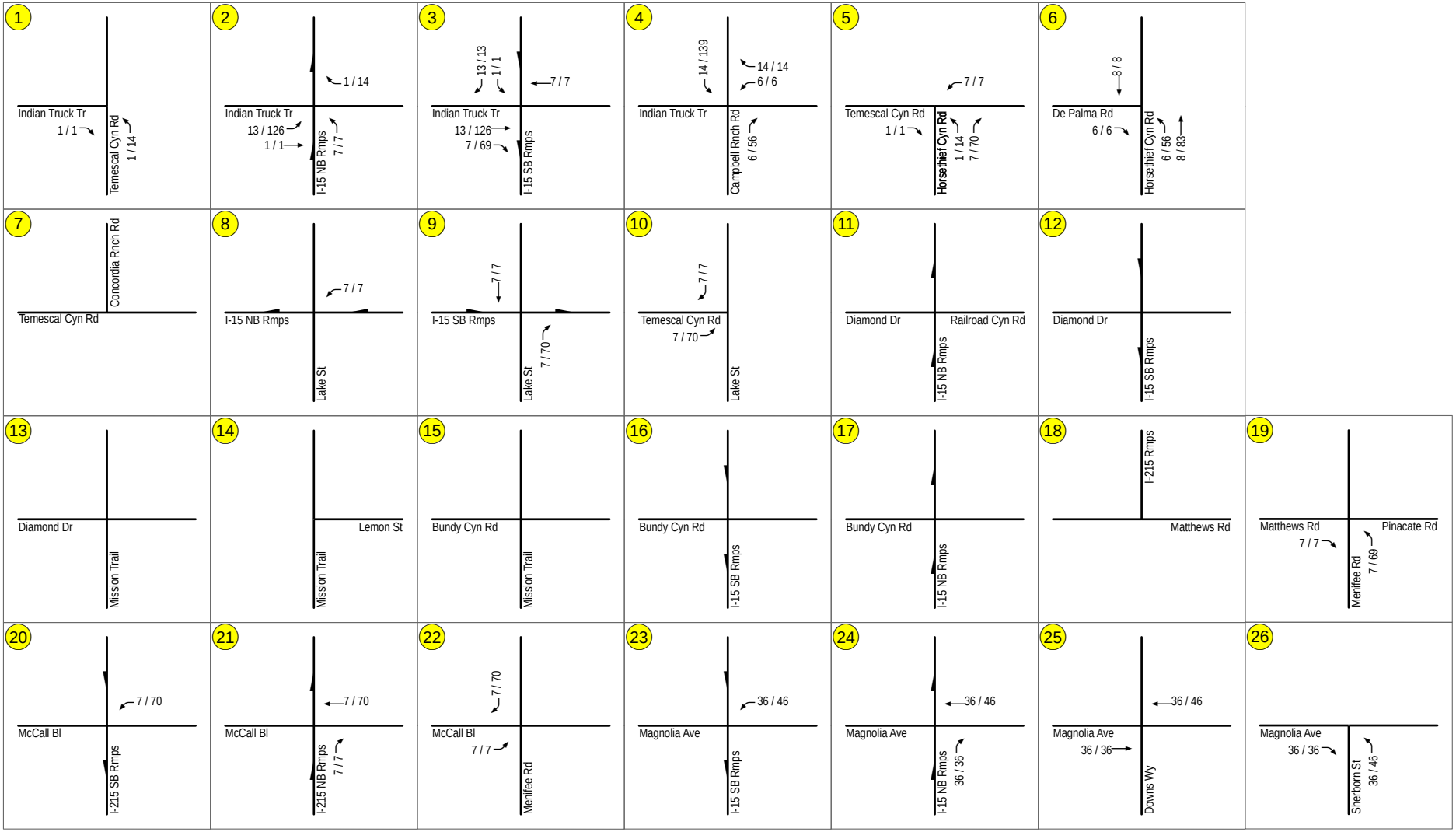

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Figure 9-1

Cumulative Projects Traffic Volumes

ALBERHILL SYSTEM PROJECT

10.0 NEAR-TERM ANALYSIS

The following section presents the analysis of study area intersections under Near-Term conditions without and with the Proposed Project.

10.1 Near-Term Traffic Volumes

Near-Term traffic volumes were calculated for the study area by adding the Near-Term cumulative project volumes onto the existing volumes. The traffic volumes represent LLG's best efforts of forecasting Near-Term conditions with the most recent information available at the time this report was prepared.

The volumes were also checked for consistency between intersections, where no driveways or roadways exist between intersections.

Figure 10–1 shows the Near-Term traffic volumes. ***Figure 10–2*** shows the Near-Term + Project traffic volumes.

10.2 Near-Term Operations

Table 10–1 summarizes the peak hour intersection operations for the Near-Term scenario. As seen in *Table 10–1*, all study area intersections are calculated to operate at LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Appendix E contains the Near-Term intersection analysis worksheets.

10.3 Near-Term + Project Operations

Table 10–1 summarizes the peak hour intersection operations for the Near-Term + Project scenario. As seen in *Table 10–1*, all study area intersections are calculated to continue to operate at LOS D or better with the exception of:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Based on the LOS thresholds outlined in *Section 5.0*, **significant impacts** are identified at the following intersections as they are calculated to continue to operate at a deficient LOS:

- Lake Street / I-15 Northbound Ramps (LOS F during the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

Appendix F contains the Near-Term + Project intersection analysis worksheet

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 1* – Alberhill Substation and Staging Area**										
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	D	Signal	AM	49.7	D	49.9	D	0.2	-
				PM	44.0	D	48.6	D	4.6	-
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	D	Signal	AM	38.9	D	39.3	D	0.4	-
				PM	34.7	C	35.3	D	0.6	-
3. Indian Truck Trail/ I-15 Southbound Ramps	Riverside County / Caltrans	D	Signal	AM	25.3	C	29.6	C	4.3	-
				PM	31.5	C	31.6	C	0.1	-
4. Indian Truck Trail/ Campbell Ranch Rd	Riverside County	D	Signal	AM	39.5	D	39.5	D	0.0	-
				PM	45.7	D	45.7	D	0.0	-
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	C	OWSC[d]	AM	11.5	B	13.0	B	1.5	-
				PM	12.2	B	15.5	C	3.3	-
6. Horse Thief Canyon Rd/ De Palma Rd	Riverside County	C	AWSC[e]	AM	9.6	A	9.6	A	0.0	-
				PM	12.8	B	12.8	B	0.0	-
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	C	OWSC	AM	9.0	A	9.5	A	0.5	-
				PM	9.8	A	11.3	B	1.5	-
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	**415.4**	**F**	**462.9**	**F**	**47.5**	**Yes**
				PM	19.2	C	19.9	C	0.7	-
9. Lake St/ I-15 Southbound Ramps	City of Lake Elsinore / Caltrans	D	OWSC	AM	18.0	C	18.3	C	0.3	-
				PM	26.0	D	27.3	D	1.3	-
10. Lake St/ Temescal Canyon Rd	City of Lake Elsinore	D	Signal	AM	8.0	A	8.2	A	0.2	-
				PM	17.2	B	31.7	C	14.5	-

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
***Zone 2* – Staging Area**										
11. I-15 Northbound Ramps/ Railroad Canyon Rd	City of lake Elsinore / Caltrans	D	Signal	AM	21.5	C	21.6	C	0.1	-
				PM	27.0	C	27.1	C	0.1	-
12. I-15 Southbound Ramps/ Diamond Dr	City of lake Elsinore / Caltrans	D	Signal	AM	37.7	D	37.8	D	0.1	-
				PM	43.5	D	43.5	D	0.0	-
13. Diamond Dr/ Lakeshore Dr/ Mission Trail	City of Lake Elsinore	D	Signal	AM	41.7	D	41.7	D	0.0	-
				PM	49.0	D	49.4	D	0.4	-
14. Mission Trail/ Lemon St	City of Wildomar	D	Signal	AM	6.1	A	6.1	A	0.0	-
				PM	6.0	A	6.0	A	0.0	-
15. Mission Trail/ Bundy Canyon Rd	City of Wildomar	D	Signal	AM	17.5	B	17.8	B	0.3	-
				PM	18.5	B	19.2	B	0.7	-
16. I-15 Southbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	27.2	C	28.8	C	1.6	-
				PM	33.0	C	33.7	C	0.7	-
17. I-15 Northbound Ramps/ Bundy Canyon Rd	City of Wildomar / Caltrans	D	Signal	AM	22.6	C	23.2	C	0.6	-
				PM	38.6	D	39.7	D	1.1	-
***Zone 3* – Staging Area**										
18. I-215 Northbound Ramps/ Matthews Rd (SR 74)	City of Perris / Caltrans	D	Signal	AM	8.6	A	8.6	A	0.0	-
				PM	8.1	A	8.1	A	0.0	-
19. Menifee Rd/ Pinacate Rd (SR 74)	City of Menifee / Caltrans	D	Signal	AM	**144.6**	**F**	**144.6**	**F**	0.0	-
				PM	**58.6**	**E**	**62.9**	**E**	**4.3**	**Yes**
20. McCall Blvd/ I-215 Southbound Ramps	City of Menifee / Caltrans	D	Signal	AM	37.9	D	38.2	D	0.3	-
				PM	35.1	D	36.4	D	1.3	-

TABLE 10–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS		
21. McCall Blvd/ I-215 Northbound Ramps	City of Menifee	D	Signal	AM	23.2	C	23.5	C	0.3	-
				PM	37.4	D	38.0	D	0.6	-
22. McCall Blvd/ Menifee Rd	City of Menifee	D	Signal	AM	39.5	D	40.0	D	0.5	-
				PM	29.4	C	29.6	C	0.2	-
***Zone 4* – Corona Quarry**										
23. I-15 Southbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	37.3	D	38.8	D	1.5	-
				PM	44.6	D	45.9	D	1.3	-
24. I-15 Northbound Ramps/ Magnolia Ave	City of Corona / Caltrans	D	Signal	AM	29.4	C	29.9	C	0.5	-
				PM	23.7	C	24.1	C	0.4	-
25. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	38.9	D	39.9	D	1.0	-
				PM	31.4	C	35.3	D	3.9	-
26. El Camino Ave/ Downs Way/ Magnolia Ave	City of Corona	D	Signal	AM	16.0	B	16.2	B	0.2	-
				PM	20.5	C	20.8	C	0.3	-

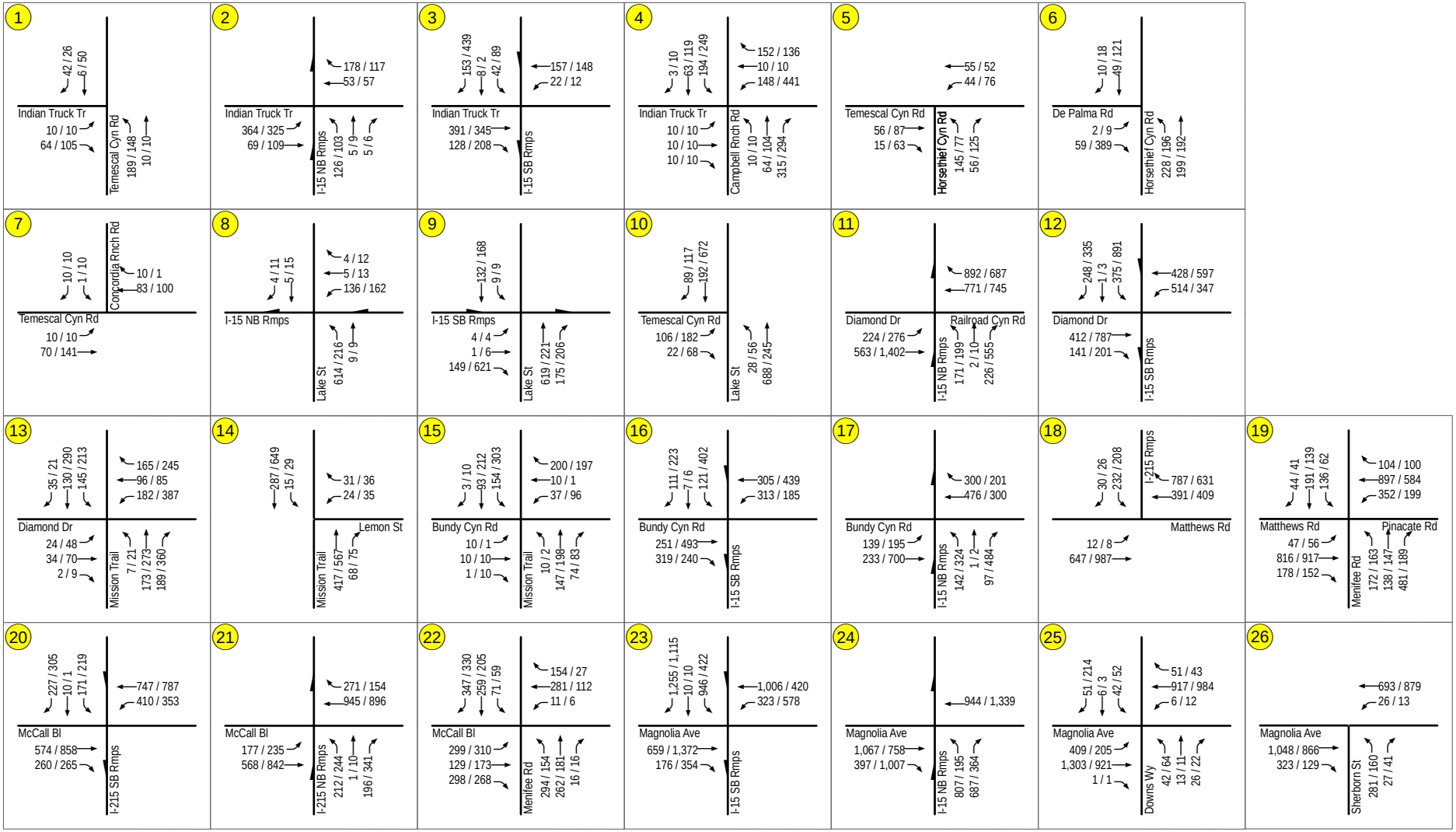
Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.
e. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F



LINSCOTT LAW & GREENSPAN engineers

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Date: 07/28/15

Figure 10-1

Near-Term Traffic Volumes

ALBERHILL SYSTEM PROJECT

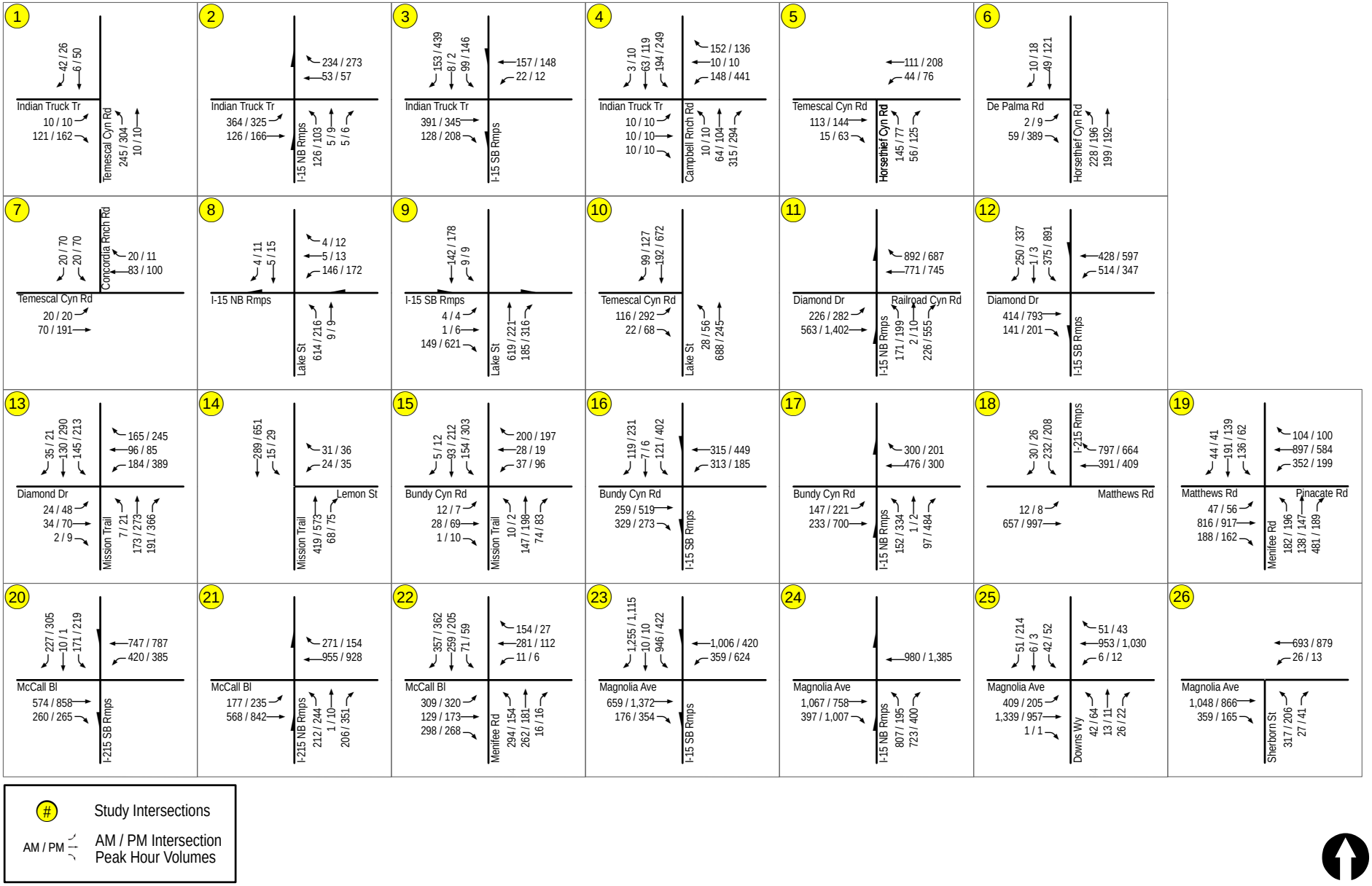

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Figure 10-2

Near-Term + Project Traffic Volumes

ALBERHILL SYSTEM PROJECT

11.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per the significance criteria and the analysis methodology presented in this report, project-related traffic is calculated to cause two (2) significant impacts within the study area. The following section identifies the significance of impact and recommended mitigation measure to address operating deficiency. This improvement, if implemented, would improve efficiency of traffic flow and return the intersection operation to below a level of significance.

11.1 Significance of Impacts

Based on the traffic impact guidelines outlined in *Section 5.0*, a significant impact is identified at the following intersection:

- Lake St/ I-15 Northbound Ramps (LOS F in the AM peak hour)
- Menifee Road / SR 74 (LOS F during the AM peak hour and LOS E during the PM peak hour)

11.2 Mitigation Measures

The following summarizes the recommended mitigation measure:

LAKE ST/ I-15 NORTHBOUND RAMPS

To mitigate the significant impact at the Lake Street/ I-15 NB ramp intersection, the project proposes to restrict construction traffic at this intersection during the AM peak hour. Given that the construction workers arrive prior to the commuter AM peak hour (7 AM to 9 AM), the restriction would apply to heavy vehicles only. The project should divert all heavy vehicles to the I-15/ Indian Truck Trail interchange during the AM peak hour. The contractor should be required to alert truck drivers of this condition and should install temporary signage on Lake Street to this effect.

As show in ***Tables 11–1*** and ***11–2***, with the implementation of the identified mitigation, no project traffic will utilize the off-ramp at the I-15 NB ramps/ Lake Street intersection during the commuter AM peak hour. Therefore, with the proposed mitigation, no traffic impacts are calculated as the level of service are reduced to pre-project levels.

As show in *Tables 11–1* and *11–2*, with the additional rerouted project traffic at the I-15/ Indian Truck Trail interchange, no impacts are identified at the affected intersections as the level of service are reduced to pre-project levels.

MENIFEE ROAD/ SR 74

To mitigate the significant impact at the Menifee Road/ SR 74 intersection, the project proposes to restrict construction traffic during the PM peak hour. The construction traffic would exit the staging area prior to or after the PM peak hour but not during the PM peak hour (4 – 6 p.m.). Alternatively, the project may also consider providing an alternative access route via Case road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.

As show in *Tables 11–1* and *11–2*, with the implementation of the identified mitigation, no traffic impacts are calculated as the level of service are reduced to pre-project levels.

Appendix G contains the post mitigation intersection calculation sheets.

TABLE 11–1
EXISTING + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Existing		Existing + Project		Existing + Project Mitigation		Δ[c]	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.6	D	49.9	D	50.0	D	0.4	–
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.6	D	38.7	D	38.8	D	0.2	–
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[d]	AM	11.2	B	12.7	B	12.8	B	1.6	–
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC	AM	9.0	A	9.5	A	9.5	A	0.5	–
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	**374.9**	**F**	**429.6**	**F**	**374.9**	**F**	0.0	–
19. Menifee Rd/ SR 74	City of Menifee	LOS D	Signal	PM	53.4	D	**55.3**	**E**	53.4	D	0.0	–

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 11–2
NEAR-TERM + PROJECT MITIGATION ANALYSIS

Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Peak Hour	Near-Term		Near-Term + Project		Near-Term + Project Mitigation		Δ^c	Significant Impact?
					Delay[a]	LOS[b]	Delay	LOS	Delay	LOS		
1. Indian Truck Trail/ Temescal Canyon Rd	Riverside County	LOS D	Signal	AM	49.7	D	49.9	D	50.0	D	0.3	–
2. Indian Truck Trail/ I-15 Northbound Ramps	Riverside County / Caltrans	LOS D	Signal	AM	38.9	D	39.3	D	39.9	D	1.0	–
5. Horse Thief Canyon Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC[d]	AM	11.5	B	13.0	B	13.2	B	1.7	–
7. Concordia Ranch Rd/ Temescal Canyon Rd	Riverside County	LOS C	OWSC	AM	9.0	A	9.5	A	9.5	A	0.5	–
8. Lake St/ I-15 Northbound Ramps	City of Lake Elsinore / Caltrans	LOS D	OWSC	AM	**415.4**	**F**	**462.9**	**F**	**415.4**	**F**	0.0	–
19. Menifee Rd/ SR 74	City of Menifee	LOS D	Signal	PM	**58.6**	**E**	**62.9**	**E**	**58.6**	**E**	0.0	–

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. "Δ" denotes the project-induced increase in delay.
d. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

1. **Bold** typeface indicates intersections operating at LOS E or F.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

12.0 CONSTRUCTION MANAGEMENT PLAN

Construction traffic associated with trucks and employees will include some minor traffic delays; however, no significant impacts are anticipated with implementation of the proposed mitigation implemented. Nevertheless, to help further reduce the impact of construction-related traffic, it is recommended that Construction Management Plan (CMP) be implemented. The CMP should be developed in coordination with the responsible jurisdiction and at a minimum, address the following:

- **Staging Areas**
  - Identify the routes that workers and construction vehicles will utilize for the delivery of construction materials (i.e. lumber, tiles piping, windows, dirt import, etc.), to access the staging areas.
  - Ensure adequate sight distance per respective jurisdiction standards are provided at staging area locations to ensure proper line of sight is available for construction vehicular and truck traffic.
  - Delivery of materials is recommended to occur off-peak, wherever possible.
  - Encourage carpooling among construction workers to reduce construction traffic demand.
  - All construction-related parking at the staging areas should be kept out of the adjacent public roadways.

- **Transmission Lines/ Fiber Optic Lines Construction**
  - All haul routes should be kept clean and free of debris including but not limited to gravel and dirt as a result of its operations.
  - Hauling or transport of oversize loads should occur off-peak wherever possible.
  - Construction activities completed within public street rights-of-way would require the preparation of a Traffic Control Plan. This Plan should be prepared according to the standards established in the current California Manual on Uniform Traffic Control Device (MUTCD) as well as each respective jurisdiction's requirements.
  - Construction activity that requires partial lane closures is recommended to occur only during off-peak hours and would require traffic control personnel (such as flagmen) to ensure smooth and efficient flow of traffic.
  - Construction activity that requires full roadway closures is recommended to occur only during nights and weekends. This would require the preparation of a "detour" plan to ensure adequate alternate routes are planned.

- **Project Mitigation**
  - As part of the project traffic mitigation at the Lake Street/ I-15 NB ramp intersection, restrict project traffic at this interchange and re-route them to the I-15/ Indian Truck Trail interchange during the AM peak hour.
  - As part of the project traffic mitigation at the Menifee Road/ SR 74 intersection, the project proposes to restrict construction traffic during the PM peak hour (4 – 6 p.m.).

The construction traffic would exit the staging area prior to or after the PM peak hour but not during the PM peak hour. Alternatively, the project may also consider providing an alternative access route via Case road to I-215/ Ethanac Road interchange. Therefore, restriction of traffic, alternative access or any combination thereof, would reduce the level of service to pre-project levels.